INTRODUCTION

Welcome to Alabama’s Career Exploration Guide 2018 Edition produced by the Alabama Department of Labor, Labor Market Information Division. This product is designed as a guide to anyone seeking a job or considering a new career direction. Included in the publication is an array of information on 275 occupations. Topics listed for each occupation include education requirements, on the job training (OJT), job tasks, licensing information, and a job outlook for the occupation in the State of Alabama. Users are also provided an employment outlook for the state for each occupation. This gives readers an idea of how many people are employed in an occupation, what employment should look like in the next decade, how many openings are estimated in Alabama each year, and the average wages one can expect to receive for a particular occupation. Another feature is a list of many of the postsecondary institutions in Alabama which offer training programs for specific occupations, as well as, related occupations. We hope this feature will accelerate the process of finding training programs in the user’s area. Choosing or changing careers requires a lot of planning and thought. This book should provide people with a great place to start.

Data Source
Information in the publication was compiled from several different sources. To allow our users to benefit from the wide range of information these resources offer, an explanation is provided below.

Occupational Information
Each occupation begins with a brief definition or description of the occupation. This information originates in the O*NET database. This database includes information on skills, abilities, work activities, and much more for over 950 occupations. O*NET uses an interactive skills-based database and everyday language to describe employee skills. O*NET offers its database online to allow everyone easy access to its valuable information. To access the website, navigate to http://www.onetonline.org.

Job Zone
O*NET uses a Job Zone classification to categorize occupations into 5 different levels of job zones based on information from employees and occupational experts that are surveyed. This data is based on education level, experience, and training needed for workers to be successful in their jobs. Each level of job zone is attached with a preparation level: 1—Little or no preparation needed; 2—Some preparation needed; 3—Medium preparation needed; 4—Considerable preparation needed; and 5—Extensive preparation needed. Each of these job zones are given a narrative description for On-the-Job-Training (OJT) and for Education required. As a result, what you will read in these descriptions are based strictly on the job zones assigned in O*NET. If you would like more information on this method, visit http://www.onetcenter.org/dl_files/JobZoneProcedure.pdf.

Tasks
This section details a list of the most common tasks performed in in each occupation and is excerpted from the O*NET database.

Licensing Information
The licensing information is taken from the Licensed Occupations Guide, which is another publication distributed by the Alabama Department of Labor, Labor Market Information Division. Information regarding occupational descriptions, minimum qualifications, application procedures, fees, and agency contact information, was compiled from 87 agencies, boards, or commissions. This publication will be updated biennially and is available in hard copy by contacting the agency.
Job Outlook
Job outlook is set up into six categories that are based on average annual growth which is taken from Alabama’s projected employment. This is described in more detail in the employment outlook section.

Excellent - above 3%
Very Good - between 2% and 3%
Good - between 1% and 2%
Satisfactory - less than 1%
No change
Poor - less than 0

Employment Outlook
All statewide data appearing in the Employment Outlook section is gathered and published by the Labor Market Information Division of the Alabama Department of Labor. Alabama’s wage data is compiled through a biannual survey, which measures occupational employment and wage rates for wage and salary workers. The resulting data is published in the Alabama Wage Survey each year.

Alabama’s projected employment data is estimated every two years for a 10-year period. The results are published in the Statewide Occupational Projections publication. The national occupational data is estimated by the U.S. Department of Labor, Bureau of Labor Statistics. To receive more detailed information about trends for the nation you can access their website at www.bls.gov.

Postsecondary Institutions
Many of the occupations found in this publication require some degree of training after high school graduation. For occupations that call for additional training, this publication will provide a list of training sites in the State of Alabama. The list provided is obtained from the O*NET database and is as current as the data in that particular database. Due to space constraints, this list is a partial excerpt from the O*NET database. For additional information on training programs, please refer to the Alabama Commission on Higher Education at http://www.ache.edu.

Related Occupations
This list will give people a glance at some additional occupations which possess similar duties, skills, education, and training. These occupations are taken from the O*NET database and are excerpts from the complete list found online.

Labor Market Information
The Labor Market Information Division of the Alabama Department of Labor can provide a plethora of information to employers, job seekers, displaced workers, career planners, etc. The Labor Market Information division’s website, at www.labor.alabama.gov/lmi provides links to many of the resources listed above and offers many of its publications online. We encourage people to take some time to peruse our site, so they can take advantage of all the information we have to offer. Furthermore, all of our valuable publications are offered free of charge, so if you would like to receive one just contact the office at (334) 956-7465.

Missing Data
In some instances, you will observe asterisks in place of numerical data. This is an indication that the data for the respective occupation cannot be reported due to standards provided by the Bureau of Labor Statistics. Blanks in the data fields represent data not found for that particular occupation.

Data in this publication is current as of January 1, 2019.

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<td>51-7042</td>
<td>Woodworking Machine Setters, Operators, and Tenders, Except Sawing</td>
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</table>
Accountants and Auditors
Examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise on systems of recording costs or other financial and budgetary data.

Education: Most of these occupations require a four-year bachelor's degree, but some do not.

OJT: Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks: Develop, maintain, and analyze budgets, preparing periodic reports that compare budgeted costs to actual costs. Prepare, examine, or analyze accounting records, financial statements, or other financial reports to assess accuracy, completeness, and conformance to reporting and procedural standards. Review accounts for discrepancies and reconcile differences. Prepare adjusting journal entries. Establish tables of accounts and assign entries to proper accounts. Analyze business operations, trends, costs, revenues, financial commitments, and obligations to project future revenues and expenses or to provide advice. Report to management regarding the finances of establishment. Advise management about issues such as resource utilization, tax strategies, and the assumptions underlying budget forecasts. Maintain or examine the records of government agencies. Compute taxes owed and prepare tax returns, ensuring compliance with payment, reporting, or other tax requirements. Advise clients in areas such as compensation, employee health care benefits, the design of accounting or data processing systems, or long-range tax or estate plans. Represent clients before taxing authorities and provide support during litigation involving financial issues. Provide internal and external auditing services for businesses or individuals. Prepare forms and manuals for accounting and bookkeeping personnel and direct their work activities. Appraise, evaluate, and inventory real property and equipment, recording information such as the description, value, and location of property.

License: Initial Application Fee: $120.00  Registration Fees for CPA's, PA's and Firms: $100.00  Re-examination Fee: $75.00

Outlook: Satisfactory

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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Accounting Officer
Certified Public Accountant
Business Analyst
Staff Accountant
Cost Accountant

Post-Secondary Institutions with Programs
Alabama A & M University
Alabama State University
Athens State University
Auburn University
Auburn University at Montgomery
Birmingham Southern College
Faulkner University
Huntingdon College
Jacksonville State University
Miles College
Oakwood University
Samford University
The University of Alabama
Troy University
Tuskegee University
University of Alabama at Birmingham
University of Alabama in Huntsville
University of Mobile
University of Montevallo
University of North Alabama
University of South Alabama
University of West Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
11-3011 Administrative Services Managers

Plan, direct, or coordinate one or more administrative services of an organization, such as records and information management, mail distribution, facilities planning and maintenance, custodial operations, and other office support services.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Direct or coordinate the supportive services department of a business, agency, or organization. Monitor the facility to ensure that it remains safe, secure, and well-maintained. Prepare and review operational reports and schedules to ensure accuracy and efficiency. Plan, administer, and control budgets for contracts, equipment, and supplies. Acquire, distribute and store supplies. Set goals and deadlines for the department. Oversee construction and renovation projects to improve efficiency and to ensure that facilities meet environmental, health, and security standards, and comply with government regulations. Oversee the maintenance and repair of machinery, equipment, and electrical and mechanical systems. Analyze internal processes and recommend and implement procedural or policy changes to improve operations, such as supply changes or the disposal of records. Manage leasing of facility space. Participate in architectural and engineering planning and design, including space and installation management. Dispose of, or oversee the disposal of, surplus or unclaimed property. Hire and terminate clerical and administrative personnel. Conduct classes to teach procedures to staff.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Administrative Coordinator
Administrative Director
Administrative Manager
Administrative Officer
Administrative Specialist
Administrator
Business Administrator
Business Manager
Facilities Manager
Office Manager

Post-Secondary Institutions with Programs
Athens State University
University of Alabama in Huntsville

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Aerospace Engineering and Operations Technicians

Operate, install, calibrate, and maintain integrated computer/communications systems, consoles, simulators, and other data acquisition, test, and measurement instruments and equipment, which are used to launch, track, position, and evaluate air and space vehicles. May record and interpret test data.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: None

Tasks:
- Construct and maintain test facilities for aircraft parts and systems, according to specifications.
- Confer with engineering personnel regarding details and implications of test procedures and results.
- Test aircraft systems under simulated operational conditions, performing systems readiness tests and pre- and post-operational checkouts, to establish design or fabrication parameters.
- Operate and calibrate computer systems and devices to comply with test requirements and to perform data acquisition and analysis.
- Inspect, diagnose, maintain, and operate test setups and equipment to detect malfunctions.
- Finish vehicle instrumentation and deinstrumentation.
- Fabricate and install parts and systems to be tested in test equipment, using hand tools, power tools, and test instruments.
- Record and interpret test data on parts, assemblies, and mechanisms.
- Identify required data, data acquisition plans and test parameters, setting up equipment to conform to these specifications.
- Adjust, repair or replace faulty components of test setups and equipment.
- Exchange cooling system components in various vehicles.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations:
- Avionics Technician
- Avionics Test Technician
- Calibration Technician
- Communication Technician
- Electronics Technician
- Engineering Technician
- Instrumentation Technician
- Spacecraft Systems Engineer
- Systems Test Technician
- Test Technician

Post-Secondary Institutions with Programs:
- John C Calhoun State Community College
17-2011  Aerospace Engineers

Perform engineering duties in designing, constructing, and testing aircraft, missiles, and spacecraft. May conduct basic and applied research to evaluate adaptability of materials and equipment to aircraft design and manufacture. May recommend improvements in testing equipment and techniques.

Education: Most of these occupations typically require a four-year bachelor’s degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Evaluate product data or design from inspections or reports for conformance to engineering principles, customer requirements, environmental regulations, or quality standards. Direct or coordinate activities of engineering or technical personnel involved in designing, fabricating, modifying, or testing of aircraft or aerospace products. Diagnose performance problems by reviewing performance reports or documentation from customers or field engineers or inspecting malfunctioning or damaged products. Formulate mathematical models or other methods of computer analysis to develop, evaluate, or modify design, according to customer engineering requirements. Formulate conceptual design of aeronautical or aerospace products or systems to meet customer requirements or conform to environmental regulations. Direct aerospace research and development programs. Develop design criteria for aeronautical or aerospace products or systems, including testing methods, production costs, quality standards, environmental standards, or completion dates. Write technical reports or other documentation, such as handbooks or bulletins, for use by engineering staff, management, or customers. Analyze project requests, proposals, or engineering data to determine feasibility, productibility, cost, or production time of aerospace or aeronautical products. Maintain records of performance reports for future reference. Research new materials to determine quality or conformance to environmental standards. Plan or conduct experimental, environmental, operational, or stress tests on models or prototypes of aircraft or aerospace systems or equipment. Design new or modify existing aerospace systems to reduce polluting emissions, such as nitrogen oxide, carbon monoxide, or smoke emissions. Plan or coordinate activities concerned with investigating and resolving customers’ reports of technical problems with aircraft or aerospace vehicles. Evaluate and approve selection of vendors by studying past performance or new advertisements. Review aerospace engineering designs to determine how to reduce negative environmental impacts.

License: License Not Required.

Outlook: Good

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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Aeronautical Engineer
- Aerospace Engineer
- Aerospace Stress Engineer
- Avionics Engineer
- Design Engineer
- Flight Controls Engineer
- Flight Test Engineer
- Structural Analysis Engineer
- Systems Engineer
- Test Engineer

**Post-Secondary Institutions with Programs**

- Alabama A & M University
- Auburn University
- The University of Alabama
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Agricultural Equipment Operators

Drive and control farm equipment to till soil and to plant, cultivate, and harvest crops. May perform tasks, such as crop baling or hay bucking. May operate stationary equipment to perform post-harvest tasks, such as husking, shelling, threshing, and ginning.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: None

Tasks:
- Attach farm implements such as plows, discs, sprayers, or harvesters to tractors, using bolts and hand tools.
- Adjust, repair, and service farm machinery and notify supervisors when machinery malfunctions. Drive trucks to haul crops, supplies, tools, or farm workers. Observe and listen to machinery operation to detect equipment malfunctions. Operate or tend equipment used in agricultural production, such as tractors, combines, and irrigation equipment. Direct and monitor the activities of work crews engaged in planting, weeding, or harvesting activities. Mix specified materials or chemicals, and dump solutions, powders, or seeds into planter or sprayer machinery. Manipulate controls to set, activate, and adjust mechanisms on machinery. Weigh crop-filled containers, and record weights and other identifying information. Guide products on conveyors to regulate flow through machines, and to discard diseased or rotten products. Load hoppers, containers, or conveyors to feed machines with products, using forklifts, transfer augers, suction gates, shovels, or pitchforks. Spray fertilizer or pesticide solutions to control insects, fungus and weed growth, and diseases, using hand sprayers. Load and unload crops or containers of materials, manually or using conveyors, handtrucks, forklifts, or transfer augers. Irrigate soil, using portable pipes or ditch systems, and maintain ditches or pipes and pumps. Walk beside or ride on planting machines while inserting plants in planter mechanisms at specified intervals. Operate towed machines such as seed drills or manure spreaders to plant, fertilize, dust, and spray crops. Position boxes or attach bags at discharge ends of machinery to catch products, removing and closing full containers.

License: License Not Required.

Outlook: Satisfactory

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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Baler Operator
- Cutter Operator
- Equipment Operator
- Farm Hand
- Farm Laborer
- Hay Baler
- Irrigation Worker
- Rake Operator
- Tractor Driver
- Tractor Operator

Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-3011 Aircraft Mechanics and Service Technicians
Diagnose, adjust, repair, or overhaul aircraft engines and assemblies, such as hydraulic and pneumatic systems. Includes helicopter and aircraft engine specialists.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Clean, refuel, and change oil in line service aircraft. Test operation of engines and other systems, using test equipment, such as ignition analyzers, compression checkers, distributor timers, or ammeters. Service and maintain aircraft and related apparatus by performing activities such as flushing crankcases, cleaning screens, and or moving parts. Obtain fuel and oil samples and check them for contamination. Examine and inspect aircraft components, including landing gear, hydraulic systems, and deicers to locate cracks, breaks, leaks, or other problems. Inventory and requisition or order supplies, parts, materials, and equipment. Measure parts for wear, using precision instruments. Read and interpret pilots' descriptions of problems to diagnose causes. Replace or repair worn, defective, or damaged components, using hand tools, gauges, and testing equipment. Maintain repair logs, documenting all preventive and corrective aircraft maintenance. Inspect airframes for wear or other defects. Clean engines, sediment bulk and screens, and carburetors, adjusting carburetor float levels. Check for corrosion, distortion, and invisible cracks in the fuselage, wings, and tail, using x-ray and magnetic inspection equipment. Spread plastic film over areas to be repaired to prevent damage to surrounding areas. Inspect completed work to certify that maintenance meets standards and that aircraft are ready for operation. Read and interpret maintenance manuals, service bulletins, and other specifications to determine the feasibility and method of repairing or replacing malfunctioning or damaged components. Conduct routine and special inspections as required by regulations. Maintain, repair, and rebuild aircraft structures, functional components, and parts, such as wings and fuselage, rigging, hydraulic units, oxygen systems, fuel systems, electrical systems, gaskets, or seals. Assemble and install electrical, plumbing, mechanical, hydraulic, and structural components and accessories, using hand or power tools. Install and align repaired or replacement parts for subsequent riveting or welding, using clamps and wrenches. Communicate with other workers to coordinate fitting and alignment of heavy parts, or to facilitate processing of repair parts. Examine engines through specially designed openings while working from ladders or scaffolds, or use hoists or lifts to remove the entire engine from an aircraft. Fabricate defective sections or parts, using metal fabricating machines, saws, brakes, shears, and grinders.

License: This applicant should contact their local Federal Aviation Flight Standards office in Alabama for fees and other necessary costs.

Outlook: Excellent

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$19.39</td>
</tr>
<tr>
<td>Average</td>
<td>$26.70</td>
</tr>
<tr>
<td>Experienced</td>
<td>$30.36</td>
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<tr>
<td>Entry</td>
<td>$40,320</td>
</tr>
<tr>
<td>Average</td>
<td>$55,540</td>
</tr>
<tr>
<td>Experienced</td>
<td>$63,150</td>
</tr>
<tr>
<td>2016 Estimated Employment:</td>
<td>2,770</td>
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<tr>
<td>2026 Projected Employment:</td>
<td>3,820</td>
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<tr>
<td>Average Total Openings:</td>
<td>355</td>
</tr>
<tr>
<td>Annual Growth Rate:</td>
<td>3.27%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Aircraft Maintenance Director
- Aircraft Maintenance Supervisor
- Aircraft Maintenance Technician (Aircraft Maintenance Tech)
- Aircraft Mechanic
- Aircraft Restorer
- Aircraft Technician
- Airframe and Powerplant Mechanic (A and P Mechanic)
- Aviation Maintenance Technician (AMT)
- Aviation Mechanic
- Helicopter Mechanic

Post-Secondary Institutions with Programs
- Enterprise State Community College
51-2011 Aircraft Structure, Surfaces, Rigging, and Systems Assemblers
Assemble, fit, fasten, and install parts of airplanes, space vehicles, or missiles, such as tails, wings, fuselage, bulkheads, stabilizers, landing gear, rigging and control equipment, or heating and ventilating systems.

Education: These occupations typically require a high school diploma.
OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.
Tasks: Clean, oil, or coat system components as necessary before assembly or attachment. Clean aircraft structures, parts, or components, using aqueous, semi-aqueous, aliphatic hydrocarbon, or organic solvent cleaning products or techniques to reduce carbon or other harmful emissions. Monitor robotic assembly equipment, such as snake-arm robots, used to assemble, seal, or swage aircraft structures. Attach brackets, hinges, or clips to secure or support components or subassemblies, using bolts, screws, rivets, chemical bonding, or welding. Inspect or test installed units, parts, systems, or assemblies for fit, alignment, performance, defects, or compliance with standards, using measuring instruments or test equipment. Cut, trim, file, bend, or smooth parts to ensure proper fit and clearance. Capture or segregate waste material, such as aluminum swarf, machine cutting fluid, or solvents, for recycling or environmentally responsible disposal. Adjust, repair, rework, or replace parts or assemblies to ensure proper operation. Mark identifying information on tubing or cable assemblies, using etching devices, labels, rubber stamps, or other methods. Align, fit, assemble, connect, or install system components, using jigs, fixtures, measuring instruments, hand tools, or power tools. Read blueprints, illustrations, or specifications to determine layouts, sequences of operations, or identities or relationships of parts. Weld tubing and fittings or solder cable ends, using tack-welders, induction brazing chambers, or other equipment. Fit and fasten sheet metal coverings to surface areas or other sections of aircraft prior to welding or riveting. Install accessories in swaging machines, using hand tools. Assemble prefabricated parts to form subassemblies. Verify dimensions of cable assemblies or positions of fittings, using measuring instruments. Cut cables and tubing, using master templates, measuring instruments, and cable cutters or saws. Layout and mark reference points and locations for installation of parts or components, using jigs, templates, or measuring and marking instruments. Assemble parts, fittings, or subassemblies on aircraft, using layout tools, hand tools, power tools, or fasteners, such as bolts, screws, rivets, or clamps. Swage fittings onto cables, using swaging machines. Set up or operate machines or systems to crimp, cut, bend, form, swage, flare, bead, burr, or straighten tubing, according to specifications. Position and align subassemblies in jigs or fixtures, using measuring instruments and following blueprint lines and index points. Fabricate parts needed for assembly or installation, using shop machinery or equipment.

License: License Not Required.
Outlook: Good

### Alabama Employment Outlook

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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>Entry</td>
<td>Entry</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
</tbody>
</table>

Average Total Openings: 210
Annual Growth Rate: 1.87%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- A&P Technician (Airframe and Powerplant Technician)
- Aircraft Line Assembler
- Assembler
- Assembly Riveter
- Fabricator
- Helicopter Technician
- Sheet Metal Assembler and Riveter (SMAR)
- Sheet Metal Mechanic
- Structures Mechanic
- Structures Technician

### Post-Secondary Institutions with Programs
- Enterprise State Community College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
53-3011  Ambulance Drivers and Attendants, Except Emergency Medical Technicians

Drive ambulance or assist ambulance driver in transporting sick, injured, or convalescent persons. Assist in lifting patients.

Education:  These occupations typically require a high school diploma.

OJT:  Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks:  Clean and wash rigs, ambulances, or equipment. Drive ambulances or assist ambulance drivers in transporting sick, injured, or convalescent persons. Remove and replace soiled linens or equipment to maintain sanitary conditions. Accompany and assist emergency medical technicians on calls. Place patients on stretchers and load stretchers into ambulances, usually with assistance from other attendants. Perform minor maintenance on emergency medical services vehicles, such as ambulances. Report facts concerning accidents or emergencies to hospital personnel or law enforcement officials. Replace supplies and disposable items on ambulances. Administer first aid, such as bandaging, splinting, or administering oxygen. Restrain or shackle violent patients. Earn and maintain appropriate certifications.

License:  License Not Required.

Outlook:  Very Good

Alabama Employment Outlook

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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$9.71</td>
<td>$20,200</td>
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<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$11.78</td>
<td>$24,490</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$12.81</td>
<td>$26,640</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Ambulance Attendant
Ambulance Driver
Chair Car Driver
CPR Ambulance Driver (Cardio Pulmonary Resuscitation Ambulance Driver)
Driver
Driver Medic
Emergency Care Attendant (ECA)
EMS Driver (Emergency Medical Services Driver)
First Responder
Medical Van Driver (Medi-Van Driver)

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
**Appraisers and Assessors of Real Estate**

Appraise real property and estimate its fair value. May assess taxes in accordance with prescribed schedules.

**Education:**
Most of these occupations require a four-year bachelor's degree, but some do not.

**OJT:**
Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

**Tasks:**
Determine taxability and value of properties, using methods such as field inspection, structural measurement, calculation, sales analysis, market trend studies, and income and expense analysis. Inspect properties, considering factors such as market value, location, and building or replacement costs to determine appraisal value. Explain assessed values to property owners and defend appealed assessments at public hearings. Prepare and maintain current data on each parcel assessed, including maps of boundaries, inventories of land and structures, property characteristics, and any applicable exemptions. Establish uniform and equitable systems for assessing all classes and kinds of property. Inspect new construction and major improvements to existing structures to determine values. Write and submit appraisal and tax reports for public record. Complete and maintain assessment rolls that show the assessed values and status of all property in a municipality. Analyze trends in sales prices, construction costs, and rents, to assess property values or determine the accuracy of assessments. Review information about transfers of property to ensure its accuracy, checking basic information on buyers, sellers, and sales prices and making corrections as necessary. Conduct regular reviews of property within jurisdictions to determine changes in property due to construction or demolition. Maintain familiarity with aspects of local real estate markets. Identify the ownership of each piece of taxable property. Issue notices of assessments and taxes. Approve applications for property tax exemptions or deductions. Calculate tax bills for properties by multiplying assessed values by jurisdiction tax rates. Provide sales analyses to be used for equalization of school aid. Supervise staff members. Serve on assessment review boards. Hire staff members.

**License:**
Trainee - Application Fee: $150.00/Annual License Fee: $285.00 State Registered - Application Fee: $275.00/Annual License Fee: $285.00 Certified General - Application Fee: $275.00/Annual License Fee: $285.00/Washington Registry Fee: $40.00

**Outlook:**
Satisfactory

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**Alabama Employment Outlook**

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$14.94</td>
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<tr>
<td><strong>Average</strong></td>
<td><strong>Average</strong></td>
</tr>
<tr>
<td>$25.95</td>
<td>$53,970</td>
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<tr>
<td><strong>Experienced</strong></td>
<td><strong>Experienced</strong></td>
</tr>
<tr>
<td>$31.45</td>
<td>$65,420</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Assessors
- Buyers and Purchasing Agents, Farm Products
- Cost Estimators
- Insurance Adjusters, Examiners, and Investigators
- Logistics Managers
- Energy Auditors
- Supply Chain Managers
- Regulatory Affairs Specialists
- Insurance Appraisers, Auto Damage
- Title Examiners, Abstractors, and Searchers

**Post-Secondary Institutions with Programs**
- Auburn University
- James H Faulkner State Community College
- Jefferson State Community College
- John C Calhoun State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Architectural and Civil Drafters

Prepare detailed drawings of architectural and structural features of buildings or drawings and topographical relief maps used in civil engineering projects, such as highways, bridges, and public works. Use knowledge of building materials, engineering practices, and mathematics to complete drawings.

Education: Most of these occupations require a four-year bachelor's degree, but some do not. OJT: Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks: Operate computer-aided drafting (CAD) equipment or conventional drafting station to produce designs, working drawings, charts, forms, and records. Analyze building codes, by-laws, space and site requirements, and other technical documents and reports to determine their effect on architectural designs. Coordinate structural, electrical, and mechanical designs and determine a method of presentation to graphically represent building plans. Draw rough and detailed scale plans for foundations, buildings, and structures, based on preliminary concepts, sketches, engineering calculations, specification sheets, and other data. Lay out and plan interior room arrangements for commercial buildings, using computer-assisted drafting (CAD) equipment and software. Obtain and assemble data to complete architectural designs, visiting job sites to compile measurements as necessary. Supervise, coordinate, and inspect the work of draftspersons, technicians, and technologists on construction projects. Determine procedures and instructions to be followed, according to design specifications and quantity of required materials. Represent architect on construction site, ensuring builder compliance with design specifications and advising on design corrections, under architect's supervision. Check dimensions of materials to be used and assign numbers to lists of materials. Analyze technical implications of architect's design concept, calculating weights, volumes, and stress factors. Prepare cost estimates, contracts, bidding documents, and technical reports for specific projects under an architect's supervision. Reproduce drawings on copy machines or trace copies of plans and drawings, using transparent paper or cloth, ink, pencil, and standard drafting instruments. Prepare colored drawings of landscape and interior designs for presentation to client. Calculate heat loss and gain of buildings and structures to determine required equipment specifications, following standard procedures. Create freehand drawings and lettering to accompany drawings. Build landscape, architectural, and display models.

License: License Not Required.

Outlook: Satisfactory

**Alabama Employment Outlook**

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<tr>
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<tbody>
<tr>
<td></td>
<td>2016 Estimated Employment:</td>
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<tr>
<td></td>
<td>Entry</td>
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<tr>
<td>Hourly Wage</td>
<td>$18.16</td>
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<tr>
<td>Average</td>
<td>$18.16</td>
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<tr>
<td>Experienced</td>
<td>$29.15</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Mechanical Drafters
- Broadcast Technicians
- Architectural Drafters
- Mapping Technicians
- Geophysical Data Technicians
- Database Administrators
- Food Science Technicians
- Manufacturing Production Technicians
- Electrical Engineering Technicians
- Computer Systems Engineers/Architects

**Post-Secondary Institutions with Programs**
- Bevill State Community College
- Bishop State Community College
- Brown Mackie College-Birmingham
- Central Alabama Community College
- Gadsden State Community College
- George C Wallace Community College-Dothan
- George C Wallace State Community College-Hanceville
- George C Wallace State Community College-Selma
- H Councill Trenholm State Community College
- J F Drake State Community and Technical College
- J F Ingram State Technical College
- John C Calhoun State Community College
- Lawson State Community College-Birmingham Campus
- Northeast Alabama Community College
- Northwest-Shoals Community College
- Remington College-Mobile Campus
- Shelton State Community College
- Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
11-9041 Architectural and Engineering Managers

Plan, direct, or coordinate activities in such fields as architecture and engineering or research and development in these fields.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Manage the coordination and overall integration of technical activities in architecture or engineering projects. Direct the engineering of water control, treatment, or distribution projects. Perform administrative functions, such as reviewing or writing reports, approving expenditures, enforcing rules, or purchasing of materials or services. Confer with management, production, or marketing staff to discuss project specifications or procedures. Establish scientific or technical goals within broad outlines provided by top management. Direct, review, or approve project design changes. Consult or negotiate with clients to prepare project specifications. Assess project feasibility by analyzing technology, resource needs, or market demand. Evaluate the environmental impacts of engineering, architecture, or research and development activities. Prepare budgets, bids, or contracts. Review, recommend, or approve contracts or cost estimates. Solicit project support by conferring with officials or providing information to the public. Present and explain proposals, reports, or findings to clients. Develop or implement policies, standards, or procedures for engineering and technical work. Evaluate environmental regulations or social pressures related to environmental issues to inform strategic or operational decision-making. Plan or direct the installation, testing, operation, maintenance, or repair of facilities or equipment. Administer highway planning, construction, or maintenance. Develop or implement programs to improve sustainability or reduce the environmental impacts of engineering or architecture activities or operations. Identify environmental threats or opportunities associated with the development and launch of new technologies. Direct recruitment, placement, and evaluation of architecture or engineering project staff. Plan, direct, or coordinate survey work with other project activities.

License: License Not Required.

Outlook: Good

<table>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$47.93</td>
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<td>Average</td>
<td>Average</td>
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<tr>
<td>$66.88</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$76.35</td>
<td>$158,810</td>
</tr>
</tbody>
</table>

2016 Estimated Employment: 2,530
2026 Projected Employment: 2,800
Average Total Openings: 210
Annual Growth Rate: 1.02%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Chief Engineer
Civil Engineering Manager
Director of Engineering
Engineering Group Manager
Engineering Manager
Engineering Program Manager
Principal Engineer
Project Engineer
Project Engineering Manager
Project Manager

Post-Secondary Institutions with Programs
Alabama A & M University
Alabama State University
Auburn University
Samford University
The University of Alabama
Tuskegee University
University of Alabama at Birmingham
University of Alabama in Huntsville
University of South Alabama

2018 Career Exploration Guide
See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
51-2098 Assemblers and Fabricators

Work as part of a team having responsibility for assembling an entire product or component of a product. Team assemblers can perform all tasks conducted by the team in the assembly process and rotate through all or most of them rather than being assigned to a specific task on a permanent basis. May participate in making management decisions affecting the work. Includes team leaders who work as part of the team.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Shovel, sweep, or otherwise clean work areas. Package finished products and prepare them for shipment. Perform quality checks on products and parts. Maintain production equipment and machinery. Complete production reports to communicate team production level to management. Supervise assemblers and train employees on job procedures. Determine work assignments and procedures. Rotate through all the tasks required in a particular production process. Provide assistance in the production of wiring assemblies. Review work orders and blueprints to ensure work is performed according to specifications. Operate machinery and heavy equipment, such as forklifts.

License: License Not Required.

Outlook: Good

### Alabama Employment Outlook

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<tr>
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<td>Annual Wage</td>
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<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$10.20</td>
<td>$21,220</td>
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<tr>
<td>Average</td>
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<tr>
<td>$16.39</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$19.48</td>
<td>$40,530</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Assembler
- Assembly Associate
- Assembly Line Machine Operator
- Assembly Line Worker
- Assembly Operator
- Certified Composites Technician (CCT)
- Fabricator
- Operator Technician
- Production Associate
- Team Assembler

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
29-9091 Athletic Trainers
Evaluate and advise individuals to assist recovery from or avoid athletic-related injuries or illnesses, or maintain peak physical fitness. May provide first aid or emergency care.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** None

**Tasks:** Apply protective or injury preventive devices, such as tape, bandages, or braces, to body parts, such as ankles, fingers, or wrists. Care for athletic injuries, using physical therapy equipment, techniques, or medication. Evaluate athletes' readiness to play and provide participation clearances when necessary and warranted. Assess and report the progress of recovering athletes to coaches or physicians. Perform general administrative tasks, such as keeping records or writing reports. Travel with athletic teams to be available at sporting events. Inspect playing fields to locate any items that could injure players. Conduct an initial assessment of an athlete's injury or illness to provide emergency or continued care and to determine whether they should be referred to physicians for definitive diagnosis and treatment. File athlete insurance claims and communicate with insurance providers. Collaborate with physicians to develop and implement comprehensive rehabilitation programs for athletic injuries. Advise athletes on the proper use of equipment. Massage body parts to relieve soreness, strains, or bruises. Perform team support duties, such as running errands, maintaining equipment, or stocking supplies. Plan or implement comprehensive athletic injury or illness prevention programs. Lead stretching exercises for team members prior to games or practices. Accompany injured athletes to hospitals. Recommend special diets to improve athletes' health, increase their stamina, or alter their weight. Conduct research or provide instruction on subject matter related to athletic training or sports medicine. Teach sports medicine courses to athletic training students. Develop training programs or routines designed to improve athletic performance. Instruct coaches, athletes, parents, medical personnel, or community members in the care and prevention of athletic injuries. Confer with coaches to select protective equipment.

**License:** Application & License Fee: $175.00 Annual Renewal Fee: $75.00

**Outlook:** Very Good

### Alabama Employment Outlook

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<td><strong>Annual Wage</strong></td>
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<td>Average</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td></td>
<td><strong>$32,510</strong></td>
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<td><strong>$43,720</strong></td>
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<td></td>
<td><strong>$49,330</strong></td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Assistant Athletic Trainer
- Athletic Instructor
- Athletic Trainer
- Certified Athletic Trainer
- Clinical Instructor
- Graduate Assistant Athletic Trainer
- Head Athletic Trainer
- Head Athletic Trainer/Strength Coach
- Resident Athletic Trainer
- Sports Medicine Coordinator

**Post-Secondary Institutions with Programs**
- Huntingdon College
- Samford University
- Southern Union State Community College
- The University of Alabama
- Troy University
- University of Mobile
- University of West Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Atmospheric and Space Scientists

Investigate atmospheric phenomena and interpret meteorological data, gathered by surface and air stations, satellites, and radar to prepare reports and forecasts for public and other uses. Includes weather analysts and forecasters whose functions require the detailed knowledge of meteorology.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Prepare weather reports or maps for analysis, distribution, or use in weather broadcasts, using computer graphics. Measure wind, temperature, and humidity in the upper atmosphere, using weather balloons. Prepare forecasts or briefings to meet the needs of industry, business, government, or other groups. Broadcast weather conditions, forecasts, or severe weather warnings to the public via television, radio, or the Internet or provide this information to the news media. Direct forecasting services at weather stations or at radio or television broadcasting facilities. Analyze historical climate information, such as precipitation or temperature records, to help predict future weather or climate trends. Develop or use mathematical or computer models for weather forecasting. Gather data from sources such as surface or upper air stations, satellites, weather bureaus, or radar for use in meteorological reports or forecasts. Interpret data, reports, maps, photographs, or charts to predict long- or short-range weather conditions, using computer models and knowledge of climate theory, physics, and mathematics. Conduct numerical simulations of climate conditions to understand and predict global or regional weather patterns. Perform managerial duties, such as creating work schedules, creating or implementing staff training, matching staff expertise to situations, or analyzing performance of offices. Analyze climate data sets, using techniques such as geophysical fluid dynamics, data assimilation, or numerical modeling. Consult with other offices, agencies, professionals, or researchers regarding the use and interpretation of climatological information for weather predictions and warnings. Formulate predictions by interpreting environmental data, such as meteorological, atmospheric, oceanic, paleoclimate, climate, or related information. Apply meteorological knowledge to issues such as global warming, pollution control, or ozone depletion. Conduct meteorological research into the processes or determinants of atmospheric phenomena, weather, or climate. Teach college-level courses on topics such as atmospheric and space science, meteorology, or global climate change. Create visualizations to illustrate historical or future changes in the Earth's climate, using paleoclimate or climate geographic information systems (GIS) databases. Research the impact of industrial projects or pollution on climate, air quality, or weather phenomena. Prepare scientific atmospheric or climate reports, articles, or texts. Collect air samples from planes or ships over land or sea to study atmospheric composition. Conduct wind assessment, integration, or validation studies. Design or develop new equipment or methods for meteorological data collection, remote sensing, or related applications. Estimate or predict the effects of global warming over time for specific geographic regions.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$30.16</td>
</tr>
<tr>
<td>Average</td>
<td>$48.02</td>
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<tr>
<td>Experienced</td>
<td>$56.95</td>
</tr>
</tbody>
</table>

**Annual Growth Rate:** 1.50%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Broadcast Meteorologist
- Chief Meteorologist
- Forecaster
- General Forecaster
- Hydrometeorological Technician
- Meteorologist
- Meteorologist-in-Charge
- Science and Operations Officer (SOO)
- Warning Coordination Meteorologist
- Weather Forecaster

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.

---

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Audio and Video Equipment Technicians

Set up, or set up and operate audio and video equipment including microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards, and related electronic equipment for concerts, sports events, meetings and conventions, presentations, and news conferences. May also set up and operate associated spotlights and other custom lighting systems.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Construct and position properties, sets, lighting equipment, and other equipment. Install, adjust, and operate electronic equipment to record, edit, and transmit radio and television programs, motion pictures, video conferencing, or multimedia presentations. Mix and regulate sound inputs and feeds or coordinate audio feeds with television pictures. Meet with directors and senior members of camera crews to discuss assignments and determine filming sequences, camera movements, and picture composition. Determine formats, approaches, content, levels, and mediums to effectively meet objectives within budgetary constraints, using research, knowledge, and training. Diagnose and resolve media system problems. Edit videotapes by erasing and removing portions of programs and adding video or sound as required. Control the lights and sound of events, such as live concerts, before and after performances, and during intermissions. Compress, digitize, duplicate, and store audio and video data. Monitor incoming and outgoing pictures and sound feeds to ensure quality and notify directors of any possible problems. Inform users of audio and videotaping service policies and procedures. Analyze and maintain data logs for audio-visual activities. Obtain, set up, and load videotapes for scheduled productions or broadcasts. Reserve audio-visual equipment and facilities, such as meeting rooms. Locate and secure settings, properties, effects, and other production necessities. Switch sources of video input from one camera or studio to another, from film to live programming, or from network to local programming. Direct and coordinate activities of assistants and other personnel during production. Maintain inventories of audio and videotapes and related supplies. Perform minor repairs and routine cleaning of audio and video equipment. Perform narration of productions or present announcements. Notify supervisors when major equipment repairs are needed. Design layouts of audio and video equipment and perform upgrades and maintenance. Record and edit audio material, such as movie soundtracks, using audio recording and editing equipment. Obtain and preview musical performance programs prior to events to become familiar with the order and approximate times of pieces. Organize and maintain compliance, license, and warranty information related to audio and video facilities. Plan and develop pre-production ideas into outlines, scripts, story boards, and graphics, using own ideas or specifications of assignments.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
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<td>Entry</td>
<td>$8.84</td>
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<tr>
<td>Entry</td>
<td>$18,390</td>
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<td>Average</td>
<td>$17.24</td>
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<td>$35,850</td>
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<td>$21.43</td>
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<tr>
<td>Experienced</td>
<td>$44,580</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Audio Technician
Audio Visual Specialist
Audio Visual Technician
Master Control Operator (MCO)
Media Specialist
Media Technician
Multimedia Educational Specialist
Operations Technician
Stagehand
Video Technician

Post-Secondary Institutions with Programs
John C Calhoun State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Automotive and Watercraft Service Attendants

Service automobiles, buses, trucks, boats, and other automotive or marine vehicles with fuel, lubricants, and accessories. Collect payment for services and supplies. May lubricate vehicle, change motor oil, install antifreeze, or replace lights or other accessories, such as windshield wiper blades or fan belts. May repair or replace tires.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Collect cash payments from customers and make change or charge purchases to customers' credit cards and provide customers with receipts.
- Clean windshields.
- Order stock and price and shelve incoming goods.
- Test and charge batteries. Prepare daily reports of fuel, oil, and accessory sales. Maintain customer records and follow up periodically with telephone, mail, or personal reminders of services due.
- Check tire pressure and levels of fuel, motor oil, transmission, radiator, battery, or other fluids, adding air or fluids as required.
- Perform minor repairs, such as adjusting brakes, replacing spark plugs, or changing engine oil or filters.
- Activate fuel pumps and fill fuel tanks of vehicles with gasoline or diesel fuel to specified levels.
- Clean parking areas, offices, restrooms, or equipment and remove trash. Grease and lubricate vehicles or specified units, such as springs, universal joints, or steering knuckles, using grease guns or spray lubricants. Sell and install accessories, such as batteries, windshield wiper blades, fan belts, bulbs, or headlamps. Provide customers with information about local roads or highways. Operate car washes.
- Rotate, test, and repair or replace tires.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
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</thead>
<tbody>
<tr>
<td>Entry $8.43</td>
<td>Entry $17,540</td>
<td>1,630</td>
<td>1,830</td>
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<tr>
<td>Average $11.30</td>
<td>Average $23,490</td>
<td></td>
<td></td>
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<td>Experienced $12.73</td>
<td>Experienced $26,470</td>
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<tr>
<td>Average Total Openings:</td>
<td></td>
<td>300</td>
<td></td>
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<tr>
<td>Annual Growth Rate:</td>
<td></td>
<td>1.16%</td>
<td></td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Attendant
- Boat Operator
- Dock Attendant
- Dock Hand
- Fuel Attendant
- Fuel Dock Attendant
- Gas Attendant
- Gas Pumper
- Marine Fuel Dock Attendant
- Service Station Attendant

**Post-Secondary Institutions with Programs**
- No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-3021 Automotive Body and Related Repairers
Repair and refinish automotive vehicle bodies and straighten vehicle frames.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Fit and weld replacement parts into place, using wrenches and welding equipment, and grind down welds to smooth them, using power grinders and other tools. Follow supervisors' instructions as to which parts to restore or replace and how much time the job should take. Position dolly blocks against surfaces of dented areas and beat opposite surfaces to remove dents, using hammers. Mix polyester resins and hardeners to be used in restoring damaged areas. Clean work areas, using air hoses, to remove damaged material and discarded fiberglass strips used in repair procedures. Remove upholstery, accessories, electrical window-and-seat-operating equipment, and trim to gain access to vehicle bodies and fenders. File, grind, sand, and smooth filled or repaired surfaces, using power tools and hand tools. Cut and tape plastic separating film to outside repair areas to avoid damaging surrounding surfaces during repair procedure and remove tape and wash surfaces after repairs are complete. Fill small dents that cannot be worked out with plastic or solder. Remove damaged sections of vehicles using metal-cutting guns, air grinders and wrenches, and install replacement parts using wrenches or welding equipment. Review damage reports, prepare or review repair cost estimates, and plan work to be performed. Sand body areas to be painted and cover bumpers, windows, and trim with masking tape or paper to protect them from the paint. Remove small pits and dimples in body metal, using pick hammers and punches. Apply heat to plastic panels, using hot-air welding guns or immersion in hot water, and press the softened panels back into shape by hand. Adjust or align headlights, wheels, and brake systems. Inspect repaired vehicles for proper functioning, completion of work, dimensional accuracy, and overall appearance of paint job, and test drive vehicles to ensure proper alignment and handling. Remove damaged panels, and identify the family and properties of the plastic used on a vehicle. Chain or clamp frames and sections to alignment machines that use hydraulic pressure to align damaged components. Prime and paint repaired surfaces, using paint sprayguns and motorized sanders.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

Alabama Wage Data

<table>
<thead>
<tr>
<th></th>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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<tr>
<td>Entry</td>
<td>$13.83</td>
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<td>$19.88</td>
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Alabama Projections

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<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
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</thead>
<tbody>
<tr>
<td>Entry</td>
<td>2,540</td>
<td>2,740</td>
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<td>Average</td>
<td></td>
<td>270</td>
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<tr>
<td>Experienced</td>
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<td>Annual Growth Rate:</td>
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<tr>
<td></td>
<td></td>
<td>0.76%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Auto Body Man
Auto Body Repair Technician
Auto Body Repairer
Auto Body Repairman
Auto Body Technician
Autobody Technician
Automotive Painter
Body and Frame Man
Body Man
Body Technician

Post-Secondary Institutions with Programs
Bevill State Community College
Bishop State Community College
Gadsden State Community College
George C Wallace Community College - Dothan
H Councill Trenholm State Technical College
J F Ingram State Technical College
Jefferson State Community College
John C Calhoun State Community College
Lawson State Community College - Birmingham
Northwest-Shoals Community College - Muscle Shoals
Reid State Technical College
Shelton State Community College
Southern Union State Community College
Wallace State Community College - Hanceville

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Remove broken or damaged glass windshields or window glass from motor vehicles, using hand tools to remove screws from frames holding glass. Install new foam dams on pinchwelds, if required. Hold cut or uneven edges of glass against automated abrasive belts to shape or smooth edges. Check for and remove moisture or contamination in damaged areas and keep areas dry until repairs are complete. Apply a bead of urethane around the perimeter of each pinchweld and dress the remaining urethane on the pinchwelds so that it is of uniform level and thickness. Select appropriate tools, safety equipment, and parts, according to job requirements. Allow all glass parts installed with urethane ample time to cure, taking temperature and humidity into account. Remove moldings, clips, windshield wipers, screws, bolts, and inside A-pillar moldings and lower liners in preparation for installation or repair work. Remove all dirt, foreign matter, and loose glass from damaged areas, apply primer along windshield or window edges, and allow primer to dry. Install replacement glass in vehicles. Obtain windshields or windows for specific automobile makes and models from stock and examine them for defects prior to installation. Cool or warm glass in the event of temperature extremes. Install, repair, or replace safety glass and related materials, such as back glass heating elements, on vehicles or equipment. Prime all scratches on pinchwelds with primer and allow to dry. Replace or adjust motorized or manual window-raising mechanisms. Cut flat safety glass according to specified patterns or perform precision pattern making and glass cutting to custom fit replacement windows. Replace all moldings, clips, windshield wipers, or other parts that were removed prior to glass replacement or repair. Install rubber channeling strips around edges of glass or frames to weatherproof windows or to prevent rattling.

License: License Not Required.

Outlook: Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th></th>
<th>Alabama Wage Data</th>
<th></th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hourly Wage</td>
<td>Annual Wage</td>
<td>2016 Estimated Employment: 180</td>
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<td>Entry</td>
<td>$11.37</td>
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<td>2026 Projected Employment: 200</td>
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<tr>
<td>Average</td>
<td>$18.19</td>
<td>$37,830</td>
<td>Average Total Openings: 20</td>
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<tr>
<td>Experienced</td>
<td>$21.60</td>
<td>$44,930</td>
<td>Annual Growth Rate: 1.06%</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Automotive Glass Installer (Auto Glass Installer)
- Automotive Glass Technician (Auto Glass Technician)
- Automotive Glazier (Auto Glazier)
- Glass Installer
- Glass Installer Technician
- Glass Technician
- Glass Technician/Installer
- Master Automotive Glass Technician (Master Auto Glass Technician)
- Windshield Installer
- Windshield Repair Technician

### Post-Secondary Institutions with Programs
- Bevill State Community College
- Bishop State Community College
- Gadsden State Community College
- George C Wallace Community College - Dothan
- H Councill Trenholm State Technical College
- J F Ingram State Technical College
- Jefferson State Community College
- John C Calhoun State Community College
- Lawson State Community College - Birmingham
- Northwest-Shoals Community College - Muscle Shoals
- Reid State Technical College
- Shelton State Community College
- Southern Union State Community College
- Wallace State Community College - Hanceville

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-3023 Automotive Service Technicians and Mechanics
Diagnose, adjust, repair, or overhaul automotive vehicles.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Test drive vehicles and test components and systems, using equipment such as infrared engine analyzers, compression gauges, and computerized diagnostic devices. Test and adjust repaired systems to meet manufacturers' performance specifications. Repair, reline, replace, and adjust brakes. Review work orders and discuss work with supervisors. Confer with customers to obtain descriptions of vehicle problems and to discuss work to be performed and future repair requirements. Examine vehicles to determine extent of damage or malfunctions. Align vehicles' front ends. Tear down, repair, and rebuild faulty assemblies, such as power systems, steering systems, and linkages. Perform routine and scheduled maintenance services, such as oil changes, lubrications, and tune-ups. Plan work procedures, using charts, technical manuals, and experience. Follow checklists to ensure all important parts are examined, including belts, hoses, steering systems, spark plugs, brake and fuel systems, wheel bearings, and other potentially troublesome areas. Maintain cleanliness of work area. Repair radiator leaks. Repair and service air conditioning, heating, engine cooling, and electrical systems. Disassemble units and inspect parts for wear, using micrometers, calipers, and gauges. Overhaul or replace carburetors, blowers, generators, distributors, starters, and pumps. Repair or replace parts such as pistons, rods, gears, valves, and bearings. Repair or replace shock absorbers. Replace or replace parts such as pistons, rods, gears, valves, and bearings. Rewire ignition systems, lights, and instrument panels. Repair manual and automatic transmissions. Repair or replace shock absorbers. Replace and adjust headlights. Install and repair accessories, such as radios, heaters, mirrors, and windshield wipers. Rebuild parts, such as crankshafts and cylinder blocks. Repair damaged automobile bodies.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$11.76</td>
<td>$24,460</td>
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<tr>
<td>$19.31</td>
<td>$40,160</td>
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<tr>
<td>$23.08</td>
<td>$48,010</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Electrical and Electronics Repairers, Commercial and Industrial Equipment
- Mobile Heavy Equipment Mechanics, Except Engines
- Electricians
- Home Appliance Repairers
- Automotive Specialty Technicians
- Industrial Machinery Mechanics
- Aircraft Mechanics and Service Technicians
- Outdoor Power Equipment and Other Small Engine Mechanics
- Heating and Air Conditioning Mechanics and Installers
- Maintenance and Repair Workers, General

Post-Secondary Institutions with Programs
- Bevill State Community College
- George C Wallace Community College-Dothan
- H Councill Trenholm State Community College
- J F Drake State Community and Technical College
- James H Faulkner State Community College
- Lawson State Community College-Birmingham Campus

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-2091 Avionics Technicians

Install, inspect, test, adjust, or repair avionics equipment, such as radar, radio, navigation, and missile control systems in aircraft or space vehicles.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate’s degree.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Set up and operate ground support and test equipment to perform functional flight tests of electrical and electronic systems. Keep records of maintenance and repair work. Coordinate work with that of engineers, technicians, and other aircraft maintenance personnel. Assemble components such as switches, electrical controls, and junction boxes, using hand tools or soldering irons. Adjust, repair, or replace malfunctioning components or assemblies, using hand tools or soldering irons. Test and troubleshoot instruments, components, and assemblies, using circuit testers, oscilloscopes, or voltmeters. Lay out installation of aircraft assemblies and systems, following documentation such as blueprints, manuals, and wiring diagrams. Install electrical and electronic components, assemblies, and systems in aircraft, using hand tools, power tools, or soldering irons. Connect components to assemblies such as radio systems, instruments, magnetos, inverters, and in-flight refueling systems, using hand tools and soldering irons. Interpret flight test data to diagnose malfunctions and systemic performance problems. Operate computer-aided drafting and design applications to design avionics system modifications. Fabricate parts and test aids as required. Assemble prototypes or models of circuits, instruments, and systems for use in testing.

License: License Not Required.

Outlook: Excellent

Alabama Employment Outlook

Alabama Wage Data  

<table>
<thead>
<tr>
<th>Hourly Wage</th>
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<td>Experienced</td>
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<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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<tr>
<td>Entry</td>
<td>$41,290</td>
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<tr>
<td>Average</td>
<td>$54,410</td>
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<tr>
<td>Experienced</td>
<td>$60,970</td>
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</table>

2016 Estimated Employment: 560

2026 Projected Employment: 760

Average Total Openings: 70

Annual Growth Rate: 3.10%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Aircraft Electrical Systems Specialist
Aircraft Technician
Aviation Electrical Technician
Aviation Electronics Technician
Avionics Electronics Technician
Avionics Installer
Avionics Manager
Avionics Systems Integration Specialist
Avionics Technician
Electronic Technician

Post-Secondary Institutions with Programs

Enterpise State Community College

2018 Career Exploration Guide
Bakers
Mix and bake ingredients to produce breads, rolls, cookies, cakes, pies, pastries, or other baked goods.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Check the quality of raw materials to ensure that standards and specifications are met. Check equipment to ensure that it meets health and safety regulations and perform maintenance or cleaning, as necessary. Prepare or maintain inventory or production records. Set oven temperatures and place items into hot ovens for baking. Check products for quality and identify damaged or expired goods. Apply glazes, icings, or other toppings to baked goods, using spatulas or brushes. Observe color of products being baked and adjust oven temperatures, humidity, or conveyor speeds accordingly. Place dough in pans, molds, or on sheets and bake in production ovens or on grills. Direct or coordinate bakery deliveries. Set time and speed controls for mixing machines, blending machines, or steam kettles so that ingredients will be mixed or cooked according to instructions. Combine measured ingredients in bowls of mixing, blending, or cooking machinery. Operate slicing or wrapping machines. Order or receive supplies or equipment. Measure or weigh flour or other ingredients to prepare batters, doughs, fillings, or icings, using scales or graduated containers. Adapt the quantity of ingredients to match the amount of items to be baked. Roll, knead, cut, or shape dough to form sweet rolls, pie crusts, tarts, cookies, or other products. Decorate baked goods, such as cakes or pastries. Develop new recipes for baked goods.

License: License Not Required.

Outlook: Satisfactory

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
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<tr>
<td>Hourly Wage</td>
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<td>2026 Projected Employment: 2,050</td>
<td>Average Total Openings: 290</td>
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<td>Annual Growth Rate: 0.87%</td>
<td></td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Baker
- Bakery Clerk
- Bakery Manager
- Cake Decorator
- Dough Mixer
- Machine Operator
- Mixer
- Pastry Chef
- Processor
- Scaler

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
**43-3021 Billing and Posting Clerks**

Compile, compute, and record billing, accounting, statistical, and other numerical data for billing purposes. Prepare billing invoices for services rendered or for delivery or shipment of goods.

**Education:** These occupations usually require a high school diploma.

**OJT:** Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

**Tasks:** Post stop-payment notices to prevent payment of protested checks. Verify signatures and required information on checks. Retrieve checks returned to customers in error, adjusting customer accounts and answering inquiries about errors as necessary. Route statements for mailing or over-the-counter delivery to customers. Monitor equipment to ensure proper operation. Fix minor problems, such as equipment jams, and notify repair personnel of major equipment problems. Weigh envelopes containing statements to determine correct postage and affix postage, using stamps or metering equipment. Compare previously prepared bank statements with canceled checks and reconcile discrepancies. Take orders for imprinted checks. Encode and cancel checks, using bank machines. Load machines with statements, cancelled checks, or envelopes to prepare statements for distribution to customers or stuff envelopes by hand. Maintain files of canceled checks and customers’ signatures. Match statements with batches of canceled checks by account numbers.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td><strong>Entry</strong></td>
<td>Entry</td>
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<tr>
<td>$12.26</td>
<td>$25,500</td>
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<tr>
<td><strong>Average</strong></td>
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<tr>
<td>$16.28</td>
<td>$33,870</td>
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<td>$18.29</td>
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**2016 Estimated Employment:** 7,000

**2026 Projected Employment:** 7,850

**Average Total Openings:** 810

**Annual Growth Rate:** 1.15%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

Accounts Payable Associate
Accounts Payable Clerk
Accounts Payable Coordinator
Accounts Receivable Coordinator
Administrative Assistant
Bookkeeper
Cost Accounting Clerk
Credit Analyst

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
19-4021  Biological Technicians

Assist biological and medical scientists in laboratories. Set up, operate, and maintain laboratory instruments and equipment, monitor experiments, make observations, and calculate and record results. May analyze organic substances, such as blood, food, and drugs.

Education:  Most of these occupations typically require a four-year bachelor's degree.

OJT:  Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks:  Participate in the research, development, or manufacturing of medicinal and pharmaceutical preparations. Examine animals and specimens to detect the presence of disease or other problems. Use computers, computer-interfaced equipment, robotics or high-technology industrial applications to perform work duties. Conduct standardized biological, microbiological or biochemical tests and laboratory analyses to evaluate the quantity or quality of physical or chemical substances in food or other products. Conduct or supervise operational programs such as fish hatcheries, greenhouses and livestock production programs. Monitor laboratory work to ensure compliance with set standards. Clean, maintain and prepare supplies and work areas. Measure or weigh compounds and solutions for use in testing or animal feed. Analyze experimental data and interpret results to write reports and summaries of findings. Feed livestock or laboratory animals. Conduct research or assist in the conduct of research, including the collection of information and samples, such as blood, water, soil, plants and animals. Monitor and observe experiments, recording production and test data for evaluation by research personnel. Isolate, identify and prepare specimens for examination. Keep detailed logs of all work-related activities. Set up, adjust, calibrate, clean, maintain, and troubleshoot laboratory and field equipment. Input data into databases. Place orders for laboratory equipment and supplies. Provide technical support and services for scientists and engineers working in fields such as agriculture, environmental science, resource management, biology, and health sciences.

License:  License Not Required.

Outlook:  Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$13.77</td>
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<tr>
<td>Average</td>
<td>$19.49</td>
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<td>$28,650</td>
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<td>$40,540</td>
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<td>105</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Biological Science Laboratory Technician
Biological Science Technician
Biological Technician
Laboratory Technician
Marine Fisheries Technician
Research Assistant
Research Associate
Research Specialist
Research Technician
Wildlife Biology Technician

Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
Brickmasons and Blockmasons

Lay and bind building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Apply and smooth mortar or other mixture over work surface. Remove excess mortar with trowels and hand tools, and finish mortar joints with jointing tools, for a sealed, uniform appearance. Measure distance from reference points and mark guidelines to lay out work, using plumb bobs and levels. Clean working surface to remove scale, dust, soot, or chips of brick and mortar, using broom, wire brush, or scraper. Fasten or fuse brick or other building material to structure with wire clamps, anchor holes, torch, or cement. Construct corners by fastening in plumb position a corner pole or building a corner pyramid of bricks, and filling in between the corners using a line from corner to corner to guide each course, or layer, of brick. Break or cut bricks, tiles, or blocks to size, using trowel edge, hammer, or power saw. Calculate angles and courses and determine vertical and horizontal alignment of courses. Mix specified amounts of sand, clay, dirt, or mortar powder with water to form refractory mixtures. Interpret blueprints and drawings to determine specifications and to calculate the materials required. Examine brickwork or structure to determine need for repair. Remove burned or damaged brick or mortar, using sledgehammer, crowbar, chipping gun, or chisel. Lay and align bricks, blocks, or tiles to build or repair structures or high temperature equipment, such as cupola, kilns, ovens, or furnaces. Spray or spread refractory material over brickwork to protect against deterioration.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry</td>
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<td>$15.03</td>
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<tr>
<td>$20.97</td>
<td>$43,610</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Block Layer
Block Mason
Blockmason
Brick and Block Mason
Brick Mason
Bricklayer
Concrete Finisher
Mason
Masonry Installer
Tender

Post-Secondary Institutions with Programs
Bishop State Community College
Gadsden State Community College
George C Wallace Community College-Dothan
George C Wallace State Community College-Selma
J F Ingram State Technical College
John C Calhoun State Community College
Lawson State Community College-Birmingham Campus

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
13-2031  Budget Analysts
Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Analyze budgeting and accounting reports.

Education:  Most of these occupations typically require a four-year bachelor's degree.

OJT:  Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks:  Compile and analyze accounting records and other data to determine the financial resources required to implement a program. Consult with managers to ensure that budget adjustments are made in accordance with program changes. Provide advice and technical assistance with cost analysis, fiscal allocation, and budget preparation. Review operating budgets to analyze trends affecting budget needs. Direct the preparation of regular and special budget reports. Analyze monthly department budgeting and accounting reports to maintain expenditure controls. Interpret budget directives and establish policies for carrying out directives. Match appropriations for specific programs with appropriations for broader programs, including items for emergency funds. Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations. Seek new ways to improve efficiency and increase profits. Summarize budgets and submit recommendations for the approval or disapproval of funds requests. Perform cost-benefit analyses to compare operating programs, review financial requests, or explore alternative financing methods. Testify before examining and fund-granting authorities, clarifying and promoting the proposed budgets.

License:  License Not Required.

Outlook:  Satisfactory

Alabama Employment Outlook

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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Accounting Supervisor
Analyst
Budget Analyst
Budget Coordinator
Budget Officer
Cost Accountant
Financial Services Officer
Management and Budget Analyst
Policy Analyst
Staff Analyst

Post-Secondary Institutions with Programs
Alabama A & M University
Alabama State University
Athens State University
Auburn University
Auburn University - Montgomery
Birmingham Southern College
Brown Mackie College - Birmingham
Chattahoochee Valley Community College
Columbia Southern University
Faulkner University
Herzing University - Birmingham
Huntingdon College
Jacksonville State University
Miles College
Oakwood University
Samford University
The University of Alabama
Troy University
Tuskegee University
University of Alabama - Birmingham
University of Alabama - Huntsville
University of Mobile
University of Montevallo
University of North Alabama
University of South Alabama
University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Bus and Truck Mechanics and Diesel Engine Specialists

Diagnose, adjust, repair, or overhaul buses and trucks, or maintain and repair any type of diesel engines. Includes mechanics working primarily with automobile or marine diesel engines.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 4 years, up to and including 10 years of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Inspect, repair, and maintain automotive and mechanical equipment and machinery, such as pumps and compressors. Test drive trucks and buses to diagnose malfunctions or to ensure that they are working properly. Perform routine maintenance such as changing oil, checking batteries, and lubricating equipment and machinery. Examine and adjust protective guards, loose bolts, and specified safety devices. Raise trucks, buses, and heavy parts or equipment using hydraulic jacks or hoists. Follow green operational practices involving conservation of water or energy or reduction of solid waste. Use handtools, such as screwdrivers, pliers, wrenches, pressure gauges, or precision instruments, as well as power tools, such as pneumatic wrenches, lathes, welding equipment, or jacks and hoists. Repair or adjust seats, doors, or windows. Attach test instruments to equipment, and read dials and gauges to diagnose malfunctions. Inspect and verify dimensions and clearances of parts to ensure conformance to factory specifications. Inspect, test, and listen to defective equipment to diagnose malfunctions, using test instruments such as handheld computers, motor analyzers, chassis charts, or pressure gauges. Adjust and reline brakes, align wheels, tighten bolts and screws, and reassemble equipment. Inspect brake systems, steering mechanisms, wheel bearings, and other important parts to ensure that they are in proper operating condition. Install or repair accessories. Adjust or repair computer controlled exhaust emissions devices. Maintain or repair vehicles with alternative fuel systems, including biodiesel, hybrid, or compressed natural gas vehicles. Specialize in repairing and maintaining parts of the engine, such as fuel injection systems. Diagnose and repair vehicle heating and cooling systems. Recondition and replace parts, pistons, bearings, gears, and valves. Rewire ignition systems, lights, and instrument panels. Disassemble and overhaul internal combustion engines, pumps, generators, transmissions, clutches, and differential units. Measure vehicle emissions to determine whether they are within acceptable limits. Operate valve-grinding machines to grind and reset valves. Align front ends and suspension systems. Rebuild gas or diesel engines.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
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</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$14.57</td>
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<td><strong>Average</strong></td>
<td><strong>Average</strong></td>
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<tr>
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<td><strong>Experienced</strong></td>
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<tr>
<td>$23.32</td>
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<td><strong>Annual Growth Rate:</strong></td>
<td></td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Bus Mechanic
- Diesel Mechanic
- Diesel Technician
- Fleet Mechanic
- General Repair Mechanic
- Mechanic
- Service Technician
- Trailer Mechanic
- Transit Mechanic
- Truck Mechanic

### Post-Secondary Institutions with Programs
- Bevill State Community College
- Bishop State Community College
- Gadsden State Community College
- George C Wallace State Community College-Hanceville
- H Councill Trenholm State Community College
- J F Ingram State Technical College
- Lawson State Community College-Birmingham Campus
- Lurleen B Wallace Community College
- Shelton State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Bus Drivers, Transit and Intercity

Drive bus or motor coach, including regular route operations, charters, and private carriage. May assist passengers with baggage. May collect fares or tickets.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Maintain cleanliness of bus or motor coach. Inspect vehicles and check gas, oil, and water levels prior to departure. Drive vehicles over specified routes or to specified destinations according to time schedules, complying with traffic regulations to ensure that passengers have a smooth and safe ride. Park vehicles at loading areas so that passengers can board. Read maps to plan bus routes. Record information, such as cash receipts and ticket fares, and maintain log book. Collect tickets or cash fares from passengers. Announce stops to passengers. Report delays or accidents. Advise passengers to be seated and orderly while on vehicles. Assist passengers, such as elderly or disabled individuals, on and off bus, ensure they are seated properly, help carry baggage, and answer questions about bus schedules or routes. Regulate heating, lighting, and ventilating systems for passenger comfort. Handle passenger emergencies or disruptions. Load and unload baggage in baggage compartments. Make minor repairs to vehicle and change tires.

License: License Not Required.

Outlook: Satisfactory

### Alabama Employment Outlook

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</tr>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
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<td>Average</td>
<td>Average</td>
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<tr>
<td>$13.68</td>
<td>$28,460</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$15.63</td>
<td>$32,520</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Bus Driver
- Bus Operator
- Charter Bus Driver
- Coach Operator
- Motor Coach Driver
- Motor Coach Operator
- Transit Bus Driver
- Transit Coach Operator
- Transit Driver
- Transit Operator

### Post-Secondary Institutions with Programs

- Bevill State Community College
- Bishop State Community College
- H Councill Trenholm State Community College
- Reid State Technical College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Butchers and Meat Cutters

Cut, trim, or prepare consumer-sized portions of meat for use or sale in retail establishments.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Record quantity of meat received and issued to cooks or keep records of meat sales. Supervise other butchers or meat cutters. Prepare and place meat cuts and products in display counter, so they will appear attractive and catch the shopper’s eye. Receive, inspect, and store meat upon delivery, to ensure meat quality. Wrap, weigh, label, and price cuts of meat. Estimate requirements and order or requisition meat supplies to maintain inventories. Shape, lace, and tie roasts, using boning knife, skewer, and twine. Cut, trim, bone, tie, and grind meats, such as beef, pork, poultry, and fish, to prepare meat in cooking form. Prepare special cuts of meat ordered by customers. Cure, smoke, tenderize and preserve meat. Total sales, and collect money from customers. Negotiate with representatives from supply companies to determine order details.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
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<th>2016 Estimated Employment:</th>
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<tbody>
<tr>
<td>Entry</td>
<td>$10.71</td>
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<td>$14.75</td>
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<td>Experienced</td>
<td>$16.77</td>
<td>$34,870</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Butcher
Journeyman Meat Cutter
Meat Clerk
Meat Cutter
Meat Department Manager
Meat Manager
Meat Specialist
Meat Trimmer
Meat Wrapper
Seafood and Service Meat Manager

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Cabinetmakers and Bench Carpenters
Cut, shape, and assemble wooden articles or set up and operate a variety of woodworking machines, such as power saws, jointers, and mortisers to surface, cut, or shape lumber or to fabricate parts for wood products.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Establish the specifications of articles to be constructed or repaired or plan the methods or operations for shaping or assembling parts, based on blueprints, drawings, diagrams, or oral or written instructions. Trim, sand, or scrape surfaces or joints to prepare articles for finishing. Attach parts or subassemblies together to form completed units, using glue, dowels, nails, screws, or clamps. Match materials for color, grain, or texture, giving attention to knots or other features of the wood. Cut timber to the right size and shape and trim parts of joints to ensure a snug fit, using hand tools, such as planes, chisels, or wood files. Set up or operate machines, including power saws, jointers, mortisers, tenoners, molders, or shapers, to cut, mold, or shape woodstock or wood substitutes. Estimate the amounts, types, or costs of needed materials. Program computers to operate machinery. Perform final touch-ups with sandpaper or steel wool. Produce or assemble components of articles, such as store fixtures, office equipment, cabinets, or high-grade furniture. Reinforce joints with nails or other fasteners to prepare articles for finishing. Repair or alter wooden furniture, cabinetry, fixtures, paneling, or other pieces. Bore holes for insertion of screws or dowels, by hand or using boring machines. Install hardware, such as hinges, handles, catches, or drawer pulls, using hand tools. Verify dimensions or check the quality or fit of pieces to ensure adherence to specifications. Design furniture, using computer-aided drawing programs. Measure and mark dimensions of parts on paper or lumber stock prior to cutting, following blueprints, to ensure a tight fit and quality product. Apply Masonite, formica, or vinyl surfacing materials. Draw up detailed specifications and discuss projects with customers. Dip, brush, or spray assembled articles with protective or decorative finishes, such as stain, varnish, paint, or lacquer.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cabinet Assembler
Cabinet Builder
Cabinet Installer
Cabinetmaker
Cutter
Double End Tenon Operator
Frame Builder
Framer
Machine Operator
Woodworker

Post-Secondary Institutions with Programs
George C Wallace Community College-Dothan
J F Ingram State Technical College
Northwest-Shoals Community College
Southern Union State Community College

2018 Career Exploration Guide
See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Cardiovascular Technologists and Technicians

Conduct tests on pulmonary or cardiovascular systems of patients for diagnostic purposes. May conduct or assist in electrocardiograms, cardiac catheterizations, pulmonary functions, lung capacity, and similar tests. Includes vascular technologists.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Observe gauges, recorder, and video screens of data analysis system during imaging of cardiovascular system. Conduct electrocardiogram (EKG), phonocardiogram, echocardiogram, stress testing, or other cardiovascular tests to record patients’ cardiac activity, using specialized electronic test equipment, recording devices, or laboratory instruments. Prepare and position patients for testing. Explain testing procedures to patients to obtain cooperation and reduce anxiety. Observe ultrasound display screen and listen to signals to record vascular information, such as blood pressure, limb volume changes, oxygen saturation, or cerebral circulation. Compare measurements of heart wall thickness and chamber sizes to standard norms to identify abnormalities. Operate diagnostic imaging equipment to produce contrast enhanced radiographs of heart and cardiovascular system. Transcribe, type, and distribute reports of diagnostic procedures for interpretation by physician. Assess cardiac physiology and calculate valve areas from blood flow velocity measurements. Monitor patients’ blood pressure and heart rate using electrocardiogram (EKG) equipment during diagnostic or therapeutic procedures to notify the physician if something appears wrong. Obtain and record patient identification, medical history, or test results. Check, test, and maintain cardiology equipment, making minor repairs when necessary, to ensure proper operation. Adjust equipment and controls according to physicians’ orders or established protocol. Monitor patients’ comfort and safety during tests, alerting physicians to abnormalities or changes in patient responses. Activate fluoroscope and camera to produce images used to guide catheter through cardiovascular system. Enter factors, such as amount and quality of radiation beam, and filming sequence, into computer. Attach electrodes to the patients’ chests, arms, and legs, connect electrodes to leads from the electrocardiogram (EKG) machine, and operate the EKG machine to obtain a reading. Maintain a proper sterile field during surgical procedures. Inject contrast medium into patients’ blood vessels. Set up 24-hour Holter and event monitors, scan and interpret tapes, and report results to physicians. Assist physicians in the diagnosis and treatment of cardiac or peripheral vascular treatments, such as implanting pacemakers or assisting with balloon angioplasties to treat blood vessel blockages. Assist surgeons with vascular procedures, such as preparing balloons and stents. Perform general administrative tasks, such as scheduling appointments or ordering supplies or equipment. Conduct tests of pulmonary system, using spirometer or other respiratory testing equipment. Supervise or train other cardiology technologists or students.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<td>$29.96</td>
<td></td>
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<tr>
<td>Experienced</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cardiac Catheterization Laboratory Technologist
Cardiac Catheterization Technician
Cardiac Technician
Cardiology Technician
Cardiopulmonary Technician
Cardiovascular Technician
Cardiovascular Technologist (CVT)
Electrocardiogram Technician (EKG Technician)
Registered Cardiovascular Invasive Specialist (RCIS)

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Cargo and Freight Agents

 Expedite and route movement of incoming and outgoing cargo and freight shipments in airline, train, and trucking terminals, and shipping docks. Take orders from customers and arrange pickup of freight and cargo for delivery to loading platform. Prepare and examine bills of lading to determine shipping charges and tariffs.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Keep records of all goods shipped, received, and stored. Route received goods to first available flight or to appropriate storage areas or departments, using forklifts, hand trucks, or other equipment. Prepare manifests showing numbers of airplane passengers and baggage, mail, and freight weights, transmitting data to destinations. Attach address labels, identification codes, and shipping instructions to containers. Enter shipping information into a computer by hand or by a hand-held scanner that reads bar codes on goods. Notify consignees, passengers, or customers of freight or baggage arrival and arrange for delivery. Direct delivery trucks to shipping doors or designated marshaling areas and help load and unload goods safely. Negotiate and arrange transport of goods with shipping or freight companies. Arrange insurance coverage for goods. Install straps, braces, and padding to loads to prevent shifting or damage during shipment. Coordinate and supervise activities of workers engaged in packing and shipping merchandise. Determine method of shipment and prepare bills of lading, invoices, and other shipping documents. Advise clients on transportation and payment methods. Track delivery progress of shipments. Inspect and count items received and check them against invoices or other documents, recording shortages and rejecting damaged goods. Direct or participate in cargo loading to ensure completeness of load and even distribution of weight. Estimate freight or postal rates and record shipment costs and weights. Open cargo containers and unwrap contents, using steel cutters, crowbars, or other hand tools. Assemble containers and crates used to transport items, such as machines or vehicles. Maintain a supply of packing materials. Contact vendors or claims adjustment departments to resolve shipment problems or contact service depots to arrange for repairs. Check import or export documentation to determine cargo contents and use tariff coding system to classify goods according to fee or tariff group. Retrieve stored items and trace lost shipments as necessary. Pack goods for shipping, using tools such as staplers, strapping machines, and hammers.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<td>Entry</td>
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<tr>
<td>$27.85</td>
<td>$57,920</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cargo Agent
Documentation Clerk
Drop Shipment Clerk
Freight Broker
Intermodal Dispatcher
International Coordinator
Load Planner
Logistics Coordinator
Logistics Service Representative
Operations Manager

Post-Secondary Institutions with Programs
Central Alabama Community College
Gadsden State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Carpenters

Construct, erect, install, or repair structures and fixtures made of wood, such as concrete forms; building frameworks, including partitions, joists, studding, and rafters; and wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall and batt or roll insulation. Includes brattice builders who build doors or brattices (ventilation walls or partitions) in underground passageways.

Education: These occupations usually require a high school diploma.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Follow established safety rules and regulations and maintain a safe and clean environment. Study specifications in blueprints, sketches, or building plans to prepare project layout and determine dimensions and materials required. Measure and mark cutting lines on materials, using a ruler, pencil, chalk, and marking gauge. Shape or cut materials to specified measurements, using hand tools, machines, or power saws. Install structures or fixtures, such as windows, frames, floorings, trim, or hardware, using carpenters' hand or power tools. Verify trueness of structure, using plumb bob and level. Select and order lumber or other required materials. Arrange for subcontractors to deal with special areas, such as heating or electrical wiring work. Maintain records, document actions, and present written progress reports. Build or repair cabinets, doors, frameworks, floors, or other wooden fixtures used in buildings, using woodworking machines, carpenter's hand tools, or power tools. Erect scaffolding or ladders for assembling structures above ground level. Inspect ceiling or floor tile, wall coverings, siding, glass, or woodwork to detect broken or damaged structures. Assemble and fasten materials to make frameworks or props, using hand tools and wood screws, nails, dowel pins, or glue. Remove damaged or defective parts or sections of structures and repair or replace, using hand tools. Finish surfaces of woodwork or wallboard in houses or buildings, using paint, hand tools, or paneling. Apply shock-absorbing, sound-deadening, or decorative paneling to ceilings or walls. Cover subfloors with building paper to keep out moisture and lay hardwood, parquet, or wood-strip-block floors by nailing floors to subfloor or cementing them to mastic or asphalt base. Fill cracks or other defects in plaster or plasterboard and sand patch, using patching plaster, trowel, and sanding tool. Perform minor plumbing, welding, or concrete mixing work. Prepare cost estimates for clients or employers. Construct forms or chutes for pouring concrete. Work with or remove hazardous material.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
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<tbody>
<tr>
<td>Entry</td>
<td>2016 Estimated Employment: 12,020</td>
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<tr>
<td>Hourly Wage</td>
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<td>Entry</td>
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<td>Experienced</td>
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<tr>
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<td>$44.470</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Rough Carpenters
Maintenance and Repair Workers, General
Electrical and Electronics Repairers, Commercial and Industrial Equipment
Drywall and Ceiling Tile Installers
Electricians
Industrial Machinery Mechanics
Plumbers
Heating and Air Conditioning Mechanics and Installers
Automotive Master Mechanics
Sheet Metal Workers

Post-Secondary Institutions with Programs
Bishop State Community College
Gadsden State Community College
J F Ingram State Technical College
John C Calhoun State Community College
Lawson State Community College-Birmingham Campus
Northwest-Shoals Community College
47-2051 Cement Masons and Concrete Finishers

Smooth and finish surfaces of poured concrete, such as floors, walks, sidewalks, roads, or curbs using a variety of hand and power tools. Align forms for sidewalks, curbs, or gutters; patch voids; and use saws to cut expansion joints.

Education: These occupations typically require less than a high school diploma - or the equivalent.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Monitor how the wind, heat, or cold affect the curing of the concrete throughout the entire process. Spread, level, and smooth concrete, using rake, shovel, hand or power trowel, hand or power screed, and float. Check the forms that hold the concrete to see that they are properly constructed. Mold expansion joints and edges, using edging tools, jointers, and straightedge. Signal truck driver to position truck to facilitate pouring concrete, and move chute to direct concrete on forms. Direct the casting of the concrete and supervise laborers who use shovels or special tools to spread it. Mix cement, sand, and water to produce concrete, grout, or slurry, using hoe, trowel, tamper, scraper, or concrete-mixing machine. Fabricate concrete beams, columns, and panels. Waterproof or restore concrete surfaces, using appropriate compounds. Clean chipped area, using wire brush, and feel and observe surface to determine if it is rough or uneven. Build wooden molds, and clamp molds around area to be repaired, using hand tools. Produce rough concrete surface, using broom. Cut metal division strips, and press them into terrazzo base so that top edges form desired design or pattern. Set the forms that hold concrete to the desired pitch and depth, and align them. Operate power vibrator to compact concrete. Apply hardening and sealing compounds to cure surface of concrete, and waterproof or restore surface. Wet surface to prepare for bonding, fill holes and cracks with grout or slurry, and smooth, using trowel. Push roller over surface to embed chips in surface. Wet concrete surface, and rub with stone to smooth surface and obtain specified finish. Spread roofing paper on surface of foundation, and spread concrete onto roofing paper with trowel to form terrazzo base. Chip, scrape, and grind high spots, ridges, and rough projections to finish concrete, using pneumatic chisels, power grinders, or hand tools. Install anchor bolts, steel plates, door sills and other fixtures in freshly poured concrete or pattern or stamp the surface to provide a decorative finish. Cut out damaged areas, drill holes for reinforcing rods, and position reinforcing rods to repair concrete, using power saw and drill. Sprinkle colored marble or stone chips, powdered steel, or coloring powder over surface to produce prescribed finish. Polish surface, using polishing or surfacing machine. Apply muriatic acid to clean surface, and rinse with water.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$12.91</td>
<td>$26,850</td>
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<tr>
<td>$16.91</td>
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<tr>
<td>$18.92</td>
<td>$39,340</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cement Finisher
Cement Mason
Concrete Finisher
Concrete Mason
Finisher
Mason

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Chefs and Head Cooks
Direct and may participate in the preparation, seasoning, and cooking of salads, soups, fish, meats, vegetables, desserts, or other foods. May plan and price menu items, order supplies, and keep records and accounts.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Order or requisition food or other supplies needed to ensure efficient operation. Inspect supplies, equipment, or work areas to ensure conformance to established standards. Check the quantity and quality of received products. Check the quality of raw or cooked food products to ensure that standards are met. Determine how food should be presented and create decorative food displays. Estimate amounts and costs of required supplies, such as food and ingredients. Plan, direct, or supervise food preparation or cooking activities of multiple kitchens or restaurants in an establishment such as a restaurant chain, hospital, or hotel. Meet with sales representatives to negotiate prices or order supplies. Record production or operational data on specified forms. Monitor sanitation practices to ensure that employees follow standards and regulations. Supervise or coordinate activities of cooks or workers engaged in food preparation. Instruct cooks or other workers in the preparation, cooking, garnishing, or presentation of food. Determine production schedules and staff requirements necessary to ensure timely delivery of services. Prepare and cook foods of all types, either on a regular basis or for special guests or functions. Collaborate with other personnel to plan and develop recipes or menus, taking into account such factors as seasonal availability of ingredients or the likely number of customers. Analyze recipes to assign prices to menu items, based on food, labor, and overhead costs. Demonstrate new cooking techniques or equipment to staff. Meet with customers to discuss menus for special occasions, such as weddings, parties, or banquets. Coordinate planning, budgeting, or purchasing for all the food operations within establishments such as clubs, hotels, or restaurant chains. Arrange for equipment purchases or repairs. Recruit and hire staff, such as cooks and other kitchen workers.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>Entry $15.71</td>
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<td>Experienced</td>
<td>Experienced $28.46</td>
</tr>
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</table>

| **2026 Projected Employment:** 700 |
| **Average Total Openings:** 90 |
| **Annual Growth Rate:** 1.06% |

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Banquet Chef
Certified Executive Chef (CEC)
Chef
Chef, Instructor
Cook
Corporate Executive Chef
Executive Chef (Ex Chef)
Executive Sous Chef
Head Cook
Line Cook

Post-Secondary Institutions with Programs
George C Wallace State Community College-Hanceville
H Councill Trenholm State Community College
J F Drake State Community and Technical College
Lawson State Community College-Birmingham Campus
Lurleen B Wallace Community College
Shelton State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Chemical Engineers

Design chemical plant equipment and devise processes for manufacturing chemicals and products, such as gasoline, synthetic rubber, plastics, detergents, cement, paper, and pulp, by applying principles and technology of chemistry, physics, and engineering.

Education: Most of these occupations typically require a four-year bachelor’s degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Monitor and analyze data from processes and experiments. Troubleshoot problems with chemical manufacturing processes. Evaluate chemical equipment and processes to identify ways to optimize performance or to ensure compliance with safety and environmental regulations. Direct activities of workers who operate or are engaged in constructing and improving absorption, evaporation, or electromagnetic equipment. Perform laboratory studies of steps in manufacture of new products and test proposed processes in small-scale operation, such as a pilot plant. Perform tests and monitor performance of processes throughout stages of production to determine degree of control over variables such as temperature, density, specific gravity, and pressure. Conduct research to develop new and improved chemical manufacturing processes. Develop safety procedures to be employed by workers operating equipment or working in close proximity to ongoing chemical reactions. Prepare estimate of production costs and production progress reports for management. Design measurement and control systems for chemical plants based on data collected in laboratory experiments and in pilot plant operations. Determine most effective arrangement of operations such as mixing, crushing, heat transfer, distillation, and drying. Design and plan layout of equipment. Develop processes to separate components of liquids or gases or generate electrical currents, using controlled chemical processes.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td><strong>Hourly Wage</strong></td>
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<tr>
<td><strong>Entry</strong></td>
<td><strong>Entry</strong></td>
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<tr>
<td>$37.89</td>
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<td><strong>Average</strong></td>
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<tr>
<td>$51.27</td>
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<td>$57.96</td>
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**2016 Estimated Employment:** 590
**2026 Projected Employment:** 650
**Average Total Openings:** 45
**Annual Growth Rate:** 0.97%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Chemical Engineer
Development Engineer
Engineer
Engineering Scientist
Process Control Engineer
Process Engineer
Project Engineer
Refinery Process Engineer
Research Chemical Engineer
Scientist

Post-Secondary Institutions with Programs
Auburn University
The University of Alabama
Troy University
Tuskegee University
University of Alabama - Huntsville
University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
21-1021 Child, Family, and School Social Workers

Provide social services and assistance to improve the social and psychological functioning of children and their families and to maximize the family well-being and the academic functioning of children. May assist parents, arrange adoptions, and find foster homes for abandoned or abused children. In schools, they address such problems as teenage pregnancy, misbehavior, and truancy. May also advise teachers.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks: Administer welfare programs. Lead group counseling sessions that provide support in such areas as grief, stress, or chemical dependency. Interview clients individually, in families, or in groups, assessing their situations, capabilities, and problems to determine what services are required to meet their needs. Maintain case history records and prepare reports. Develop and review service plans in consultation with clients and perform follow-ups assessing the quantity and quality of services provided. Refer clients to community resources for services, such as job placement, debt counseling, legal aid, housing, medical treatment, or financial assistance, and provide concrete information, such as where to go and how to apply. Counsel students whose behavior, school progress, or mental or physical impairment indicate a need for assistance, diagnosing students' problems and arranging for needed services. Consult with parents, teachers, and other school personnel to determine causes of problems, such as truancy and misbehavior, and to implement solutions. Counsel parents with child rearing problems, interviewing the child and family to determine whether further action is required. Counsel individuals, groups, families, or communities regarding issues including mental health, poverty, unemployment, substance abuse, physical abuse, rehabilitation, social adjustment, child care, or medical care. Serve as liaisons between students, homes, schools, family services, child guidance clinics, courts, protective services, doctors, and other contacts to help children who face problems, such as disabilities, abuse, or poverty. Work in child and adolescent residential institutions. Provide, find, or arrange for support services, such as child care, homemaker service, prenatal care, substance abuse treatment, job training, counseling, or parenting classes to prevent more serious problems from developing. Place children in foster or adoptive homes, institutions, or medical treatment centers.

License: Application Fee: $75.00 License Renewal Fee: $100.00 Inactive Renewal Fee: $25.00

Outlook: Satisfactory

![Image](Human_Services.png)

Alabama Employment Outlook

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<td></td>
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<td>$31,120</td>
<td>Annual Growth Rate: 0.98%</td>
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<table>
<thead>
<tr>
<th>Related Occupations</th>
<th>Post-Secondary Institutions with Programs</th>
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<tbody>
<tr>
<td>Adoption Social Worker</td>
<td>Alabama A &amp; M University</td>
</tr>
<tr>
<td>Case Manager</td>
<td>Alabama State University</td>
</tr>
<tr>
<td>Case Worker</td>
<td>Auburn University</td>
</tr>
<tr>
<td>Child Protective Services Social Worker (CPS Social Worker)</td>
<td>Jacksonville State University</td>
</tr>
<tr>
<td>Family Protection Specialist</td>
<td>Judson College</td>
</tr>
<tr>
<td>Family Resource Coordinator</td>
<td>Lawrence State Community College - Birmingham</td>
</tr>
<tr>
<td>Family Service Worker</td>
<td>Miles College</td>
</tr>
<tr>
<td>Foster Care Social Worker</td>
<td>Oakwood University</td>
</tr>
<tr>
<td>School Social Worker</td>
<td>Talladega College</td>
</tr>
<tr>
<td>Youth Services Specialist</td>
<td>The University of Alabama</td>
</tr>
<tr>
<td></td>
<td>Troy University</td>
</tr>
<tr>
<td></td>
<td>Tuskegee University</td>
</tr>
<tr>
<td></td>
<td>University of Alabama - Birmingham</td>
</tr>
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<td></td>
<td>University of Montevallo</td>
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<td>University of North Alabama</td>
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<tr>
<td></td>
<td>University of South Alabama</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.
Childcare Workers
Attend to children at schools, businesses, private households, and childcare institutions. Perform a variety of tasks, such as dressing, feeding, bathing, and overseeing play.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Regulate children's rest periods. Communicate with children's parents or guardians about daily activities, behaviors, and related issues. Perform general administrative tasks, such as taking attendance, editing internal paperwork, and making phone calls. Keep records on individual children, including daily observations and information about activities, meals served, and medications administered. Perform housekeeping duties, such as laundry, cleaning, dish washing, and changing of linens. Instruct children in health and personal habits, such as eating, resting, and toilet habits. Support children's emotional and social development, encouraging understanding of others and positive self-concepts. Care for children in institutional setting, such as group homes, nursery schools, private businesses, or schools for the handicapped. Assist in preparing food and serving meals and refreshments to children. Read to children and teach them simple painting, drawing, handicrafts, and songs. Help children with homework and school work. Organize and store toys and materials to ensure order in activity areas. Perform general personnel functions, such as supervision, training, and scheduling. Identify signs of emotional or developmental problems in children and bring them to parents' or guardians' attention. Sterilize bottles and prepare formulas. Sanitize toys and play equipment. Operate in-house day-care centers within businesses. Create developmentally appropriate lesson plans. Observe and monitor children's play activities. Organize and participate in recreational activities and outings, such as games and field trips. Provide care for mentally disturbed, delinquent, or handicapped children. Maintain a safe play environment. Discipline children and recommend or initiate other measures to control behavior, such as caring for own clothing and picking up toys and books. Dress children and change diapers. Accompany children to and from school, on outings, and to medical appointments.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td></td>
<td>Hourly Wage</td>
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<tr>
<td>Entry</td>
<td>$8.40</td>
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<td>2026 Projected Employment: 16,400</td>
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<td>Average Total Openings: 2,375</td>
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<tr>
<td>Annual Growth Rate: 0.52%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Assistant Teacher
Caregiver
Child Care Worker
Child Caregiver
Childcare Provider
Childcare Worker
Daycare Teacher
Daycare Worker
Infant Teacher
Toddler Teacher

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Civil Engineers

Perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, and water and sewage systems.

**Education:** Most of these occupations typically require a four-year bachelor’s degree.

**OJT:** Employees in these occupations usually need over 4 years, up to and including 10 years of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Plan and design transportation or hydraulic systems or structures using computer assisted design or drawing tools. Provide technical advice to industrial or managerial personnel regarding design, construction, or program modifications or structural repairs. Test soils or materials to determine the adequacy and strength of foundations, concrete, asphalt, or steel. Compute load and grade requirements, water flow rates, or material stress factors to determine design specifications. Estimate quantities and cost of materials, equipment, or labor to determine project feasibility. Inspect project sites to monitor progress and ensure conformance to design specifications and safety or sanitation standards. Manage and direct the construction, operations, or maintenance activities at project site. Analyze survey reports, maps, drawings, blueprints, aerial photography, or other topographical or geologic data. Conduct studies of traffic patterns or environmental conditions to identify engineering problems and assess potential project impact. Direct engineering activities ensuring compliance with environmental, safety, or other governmental regulations. Prepare or present public reports on topics such as bid proposals, deeds, environmental impact statements, or property and right-of-way descriptions. Direct or participate in surveying to lay out installations or establish reference points, grades, or elevations to guide construction. Analyze manufacturing processes or byproducts to identify engineering solutions to minimize the output of carbon or other pollutants. Identify environmental risks and develop risk management strategies for civil engineering projects. Design energy efficient or environmentally sound civil structures. Design or engineer systems to efficiently dispose of chemical, biological, or other toxic wastes. Develop or implement engineering solutions to clean up industrial accidents or other contaminated sites.

**License:** Application Fee: $50.00 License Fee: $75.00 Renewal Fee: $100.00 Examination Fee: $225.00

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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<tr>
<td>Entry</td>
<td>$24.76</td>
<td>Entry $51,500</td>
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<tr>
<td>Average</td>
<td>$38.49</td>
<td>Average $80,070</td>
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<td>Experienced</td>
<td>$45.36</td>
<td>Experienced $94,350</td>
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### Alabama Projections

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<th>2026 Projected Employment: 4,470</th>
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<tbody>
<tr>
<td>Average Total Openings: 335</td>
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<td>Annual Growth Rate: 0.60%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

Bridge/Structure Inspection Team Leader
City Engineer
Civil Engineer
Civil Engineering Manager
County Engineer
Design Engineer
Project Engineer
Railroad Design Consultant
Structural Engineer
Traffic Engineer

**Post-Secondary Institutions with Programs**

Alabama A & M University
Auburn University
The University of Alabama
University of Alabama - Birmingham
University of Alabama - Huntsville
University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Cleaners of Vehicles and Equipment
Wash or otherwise clean vehicles, machinery, and other equipment. Use such materials as water, cleaning agents, brushes, cloths, and hoses.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Sweep, shovel, or vacuum loose debris or salvageable scrap into containers and remove containers from work areas. Turn valves or disconnect hoses to eliminate water, cleaning solutions, or vapors from machinery or tanks. Pre-soak or rinse machine parts, equipment, or vehicles by immersing objects in cleaning solutions or water, manually or using hoists. Scrub, scrape, or spray machine parts, equipment, or vehicles, using scrapers, brushes, clothes, cleaners, disinfectants, insecticides, acid, abrasives, vacuums, or hoses. Press buttons to activate cleaning equipment or machines. Apply paints, dyes, polishes, reconditioners, waxes, or masking materials to vehicles to preserve, protect, or restore color or condition. Drive vehicles to or from workshops or customers' workplaces or homes. Clean the plastic work inside cars, using paintbrushes. Maintain inventories of supplies. Turn valves or handles on equipment to regulate pressure or flow of water, air, steam, or abrasives from sprayer nozzles. Mix cleaning solutions, abrasive compositions, or other compounds, according to formulas. Inspect parts, equipment, or vehicles for cleanliness, damage, and compliance with standards or regulations. Monitor operation of cleaning machines and stop machines or notify supervisors when malfunctions occur. Rinse objects and place them on drying racks or use cloth, squeegees, or air compressors to dry surfaces. Connect hoses or lines to pumps or other equipment. Transport materials, equipment, or supplies to or from work areas, using carts or hoists. Clean and polish vehicle windows. Disassemble and reassemble machines or equipment or remove and reattach vehicle parts or trim, using hand tools. Fit boot spoilers, side skirts, or mud flaps to cars. Lubricate machinery, vehicles, or equipment or perform minor repairs or adjustments, using hand tools. Collect and test samples of cleaning solutions or vapors.

License: License Not Required.

Outlook: Satisfactory

Alabama Wage Data

<table>
<thead>
<tr>
<th></th>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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<tbody>
<tr>
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<td>$17,430</td>
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<tr>
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<td>$11.10</td>
<td>$23,100</td>
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<tr>
<td>Experienced</td>
<td>$12.47</td>
<td>$25,930</td>
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Alabama Projections

<table>
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<tr>
<th></th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
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<tr>
<td></td>
<td>5,650</td>
<td>6,230</td>
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</table>

Average Total Openings: 880

Annual Growth Rate: 0.98%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Aircraft Cleaner
Auto Detailer
Automobile Detailer
Automotive Detailer
Car Detailer
Car Washer
Detailer
Reconditioner
Sanitation Truck Cleaner

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide
See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Clergy
Conduct religious worship and perform other spiritual functions associated with beliefs and practices of religious faith or denomination. Provide spiritual and moral guidance and assistance to members.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Read from sacred texts such as the Bible, Torah, or Koran. Organize and lead regular religious services. Plan or lead religious education programs. Visit people in homes, hospitals, or prisons to provide them with comfort and support. Pray and promote spirituality. Prepare and deliver sermons or other talks. Counsel individuals or groups concerning their spiritual, emotional, or personal needs. Study and interpret religious laws, doctrines, or traditions. Perform administrative duties, such as overseeing building management, ordering supplies, contracting for services or repairs, or supervising the work of staff members or volunteers. Share information about religious issues by writing articles, giving speeches, or teaching. Administer religious rites or ordinances. Devise ways in which congregational membership can be expanded. Train leaders of church, community, or youth groups. Prepare people for participation in religious ceremonies. Participate in fundraising activities to support congregational activities or facilities. Collaborate with committees or individuals to address financial or administrative issues pertaining to congregations. Refer people to community support services, psychologists, or doctors. Instruct people who seek conversion to a particular faith. Conduct special ceremonies, such as weddings, funerals, or confirmations. Respond to requests for assistance during emergencies or crises. Organize or engage in interfaith, community, civic, educational, or recreational activities sponsored by or related to religious programs.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
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</tr>
<tr>
<td>$15.18</td>
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<td>$26.40</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Catholic Priest
- Children's Minister
- Confessor
- Congregational Care Pastor
- Minister
- Missionary Coordinator
- Pastor
- Priest
- Rabbi
- Rector

Post-Secondary Institutions with Programs
- Amridge University
- Faulkner University
- Heritage Christian University
- Huntingdon College
- Huntsville Bible College
- Oakwood University
- Samford University
- Selma University
- South University-Montgomery
- Stillman College
Clinical Laboratory Technologists and Technicians

Perform routine medical laboratory tests for the diagnosis, treatment, and prevention of disease. May work under the supervision of a medical technologist.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Conduct blood tests for transfusion purposes and perform blood counts. Obtain specimens, cultivating, isolating, and identifying microorganisms for analysis. Conduct chemical analyses of body fluids, such as blood or urine, using microscope or automatic analyzer to detect abnormalities or diseases and enter findings into computer. Set up, maintain, calibrate, clean, and test sterility of medical laboratory equipment. Test raw materials, processes, or finished products to determine quality or quantity of materials or characteristics of a substance. Analyze the results of tests or experiments to ensure conformity to specifications, using special mechanical or electrical devices. Collect blood or tissue samples from patients, observing principles of asepsis to obtain blood sample. Examine cells stained with dye to locate abnormalities. Perform medical research to further control or cure disease. Inoculate fertilized eggs, broths, or other bacteriological media with organisms. Analyze and record test data to issue reports that use charts, graphs, or narratives. Prepare standard volumetric solutions or reagents to be combined with samples, following standardized formulas or experimental procedures. Consult with a pathologist to determine a final diagnosis when abnormal cells are found. Supervise or instruct other technicians or laboratory assistants. Cut, stain, and mount tissue samples for examination by pathologists.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<td>Experienced</td>
<td>$27.20</td>
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<td>$31,050</td>
<td>$48,060</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Certified Clinical Laboratory Technician
Clinical Laboratory Scientist
Clinical Laboratory Technician (Clinical Lab Technician)
Laboratory Assistant (Lab Assistant)
Laboratory Supervisor
Laboratory Technician
Medical Laboratory Technician (MLT)
Medical Laboratory Technicians (Medical Lab Technician)
Medical Technician

Post-Secondary Institutions with Programs
Auburn University at Montgomery
Fortis Institute-Birmingham
Gadsden State Community College
George C Wallace State Community College-Hanceville
Jefferson State Community College
John C Calhoun State Community College

2018 Career Exploration Guide

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
### Clinical, Counseling, and School Psychologists

Diagnose and treat mental disorders; learning disabilities; and cognitive, behavioral, and emotional problems, using individual, child, family, and group therapies. May design and implement behavior modification programs.

#### Education:
Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

#### OJT:
Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

#### Tasks:
- Interact with clients to assist them in gaining insight, defining goals, and planning action to achieve effective personal, social, educational, or vocational development and adjustment. Identify psychological, emotional, or behavioral issues and diagnose disorders, using information obtained from interviews, tests, records, or reference materials. Use a variety of treatment methods, such as psychotherapy, hypnosis, behavior modification, stress reduction therapy, psychodrama, or play therapy. Counsel individuals and groups regarding problems, such as stress, substance abuse, or family situations, to modify behavior or to improve personal, social, or vocational adjustment. Discuss the treatment of problems with clients. Write reports on clients and maintain required paperwork. Consult with or provide consultation to other doctors, therapists, or clinicians regarding patient care. Obtain and study medical, psychological, social, and family histories by interviewing individuals, couples, or families and by reviewing records. Evaluate the effectiveness of counseling or treatments and the accuracy and completeness of diagnoses, modifying plans or diagnoses as necessary. Select, administer, score, and interpret psychological tests to obtain information on individuals' intelligence, achievements, interests, or personalities. Develop and implement individual treatment plans, specifying type, frequency, intensity, and duration of therapy. Refer clients to other specialists, institutions, or support services as necessary. Maintain current knowledge of relevant research. Consult reference material, such as textbooks, manuals, or journals, to identify symptoms, make diagnoses, or develop approaches to treatment. Observe individuals at play, in group interactions, or in other contexts to detect indications of mental deficiency, abnormal behavior, or maladjustment. Provide occupational, educational, or other information to individuals so that they can make educational or vocational plans.

#### License:
- Application Fee: $400.00
- Annual License Renewal Fee: $250.00

#### Outlook:
Good

### Alabama Employment Outlook

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<td><strong>Annual Wage</strong></td>
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<td>$32.78 Average</td>
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<tr>
<td>Experienced</td>
<td>$38.27 Experienced</td>
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</table>

**2016 Estimated Employment:** 780

**2026 Projected Employment:** 880

**Average Total Openings:** 65

**Annual Growth Rate:** 1.21%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Foreign Language and Literature Teachers, Postsecondary
- Home Economics Teachers, Postsecondary
- Social Work Teachers, Postsecondary
- Psychiatrists
- Instructional Coordinators
- Health Specialties Teachers, Postsecondary
- Speech-Language Pathologists
- Area, Ethnic, and Cultural Studies Teachers, Postsecondary
- Criminal Justice and Law Enforcement Teachers, Postsecondary
- Naturopathic Physicians

### Post-Secondary Institutions with Programs
- Alabama A & M University
- Alabama State University
- Auburn University
- Auburn University at Montgomery
- Faulkner University
- Huntington College
- Jacksonville State University
- Samford University
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama at Birmingham
- University of Alabama in Huntsville
- University of Mobile
- University of Montevallo
- University of North Alabama
- University of South Alabama
- University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Instruct or coach groups or individuals in the fundamentals of sports. Demonstrate techniques and methods of participation. May evaluate athletes' strengths and weaknesses as possible recruits or to improve the athletes' technique to prepare them for competition. Those required to hold teaching degrees should be reported in the appropriate teaching category.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Adjust coaching techniques, based on the strengths and weaknesses of athletes. Provide training direction, encouragement, motivation, and nutritional advice to prepare athletes for games, competitive events, or tours. Instruct individuals or groups in sports rules, game strategies, and performance principles, such as specific ways of moving the body, hands, or feet, to achieve desired results. Monitor athletes' use of equipment to ensure safe and proper use. Teach instructional courses and advise students. Plan, organize, and conduct practice sessions. Evaluate athletes' skills and review performance records to determine their fitness and potential in a particular area of athletics. Explain and enforce safety rules and regulations. Plan and direct physical conditioning programs that will enable athletes to achieve maximum performance. Keep and review paper, computerized, and video records of athlete, team, and opposing team performance. File scouting reports that detail player assessments, provide recommendations on athlete recruitment, and identify locations and individuals to be targeted for future recruitment efforts. Explain and demonstrate the use of sports and training equipment, such as trampolines or weights. Select, acquire, store, and issue equipment and other materials as necessary. Plan strategies and choose team members for individual games or sports seasons. Oversee the development and management of the sports program budget and fundraising activities. Hire, supervise, and work with extended coaching staff. Identify and recruit potential athletes by sending recruitment letters, meeting with recruits, and arranging and offering incentives, such as athletic scholarships. Serve as organizer, leader, instructor, or referee for outdoor and indoor games, such as volleyball, football, and soccer. Keep abreast of changing rules, techniques, technologies, and philosophies relevant to their sport. Monitor the academic eligibility of student athletes. Coordinate travel arrangements and travel with team to away contests. Counsel student athletes on academic, athletic, and personal issues. Analyze the strengths and weaknesses of opposing teams to develop game strategies. Perform activities that support a team or a specific sport, such as participating in community outreach activities, meeting with media representatives, and appearing at fundraising events. Develop and arrange competition schedules and programs. Contact the parents of players to provide information and answer questions. Arrange and conduct sports-related activities, such as training camps, skill-improvement courses, clinics, and pre-season try-outs. Negotiate with professional athletes or their representatives to obtain services and arrange contracts.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$17,420</td>
<td>3,610</td>
<td>3,970</td>
<td>535</td>
<td>0.96%</td>
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<tr>
<td>Average</td>
<td>$43,390</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Experienced</td>
<td>$56,370</td>
<td></td>
<td></td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Assistant Basketball Coach
- Assistant Coach
- Assistant Football Coach
- Baseball Coach
- Basketball Coach
- Coach
- Cross Country/Track and Field Coach
- Director of Athletics
- Football Coach
- Volleyball Coach

**Post-Secondary Institutions with Programs**
- Athens State University
- Columbia Southern University
- Faulkner University
- Huntingdon College
- Jacksonville State University
- Samford University
- Troy University
- United States Sports Academy
- University of North Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
51-9121 Coating, Painting, and Spraying Machine Setters, Operators, and Tenders

Set up, operate, or tend machines to coat or paint any of a wide variety of products, including glassware, cloth, ceramics, metal, plastic, paper, or wood, with lacquer, silver, copper, rubber, varnish, glaze, enamel, oil, or rust-proofing materials.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Perform test runs to ensure that equipment is set up properly. Set up and operate machines to paint or coat products with such materials as silver and copper solution, rubber, paint, glaze, oil, or rustproofing materials. Operate auxiliary machines or equipment used in coating or painting processes. Examine, measure, weigh, or test sample products to ensure conformance to specifications. Observe machine gauges and equipment operation to detect defects or deviations from standards, and make adjustments as necessary. Hold or position spray guns to direct spray onto articles. Select appropriate coatings, paints, or sprays, or prepare them by mixing substances according to formulas, using automated paint mixing equipment. Turn dials, handwheels, valves, or switches to regulate conveyor speeds, machine temperature, air pressure and circulation, and the flow or spray of coatings or paints. Clean machines, related equipment, and work areas, using water, solvents and other cleaning aids. Remove materials, parts, or workpieces from painting or coating machines, using hand tools. Start pumps to mix solutions and fill tanks. Spray coated products with salt solutions to determine how they will resist corrosion. Determine paint flow, viscosity, and coating quality by performing visual inspections, or by using viscometers. Record operational data on specified forms. Start and stop operation of machines, using levers or buttons. Attach hoses or nozzles to machines, using wrenches and pliers, and make adjustments to obtain the proper dispersion of spray. Fill hoppers, reservoirs, troughs, or pans with material used to coat, paint, or spray, using conveyors or pails. Weigh or measure chemicals, coatings, or paints before adding them to machines. Prepare and apply stencils, computer-generated decals, or other decorative items to finished products. Transfer completed items or products from machines to drying or storage areas, using handcarts, handtrucks, or cranes. Thread or feed items or products through or around machine rollers and dryers. Paint small items and perform touch-up painting, using paint brushes. Place items or products on feedracks, spindles, or reel strands to coat, paint, or spray them, using hands, hoists, or truck lifts. Attach and align machine parts such as rollers, guides, brushes, and blades, using hand tools.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
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<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$11.50 Entry</td>
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<tr>
<td>Average</td>
<td>$15.49 Average</td>
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<td>Experienced</td>
<td>$17.48 Experienced</td>
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</table>

Average Total Openings: 265
Annual Growth Rate: 1.53%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Coater Operator
Hand Sprayer
Industrial Painter
Machine Operator
Paint Technician
Painter
Powder Coater
Press Operator
Silk Screen Operator
Spray Painter

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Combined Food Preparation and Serving Workers, Including Fast Food

Perform duties which combine preparing and serving food and nonalcoholic beverages.

**Education:** These occupations typically require less than a high school diploma - or the equivalent.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Accept payment from customers, and make change as necessary. Distribute food to servers. Request and record customer orders, and compute bills using cash registers, multi counting machines, or pencil and paper. Prepare and serve cold drinks, or frozen milk drinks or desserts, using drink-dispensing, milkshake, or frozen custard machines. Relay food orders to cooks. Serve customers in eating places that specialize in fast service and inexpensive carry-out food. Prepare daily food items, and cook simple foods and beverages, such as sandwiches, salads, soups, pizza, or coffee, using proper safety precautions and sanitary measures. Select food items from serving or storage areas and place them in dishes, on serving trays, or in take-out bags. Communicate with customers regarding orders, comments, and complaints. Notify kitchen personnel of shortages or special orders. Clean and organize eating, service, and kitchen areas. Cook or reheat food items such as french fries. Collect and return dirty dishes to the kitchen for washing. Pack food, dishes, utensils, tablecloths, and accessories for transportation from catering or food preparation establishments to locations designated by customers. Arrange tables and decorations according to instructions. Wash dishes, glassware, and silverware after meals. Monitor and order supplies or food items and restock as necessary to maintain inventory. Serve food and beverages to guests at banquets or other social functions. Plan, prepare, and deliver meals to individuals with special dietary needs. Perform personnel activities such as supervising and training employees. Provide caterers with assistance in food preparation or service.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
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<tr>
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<tr>
<td><strong>Hourly Wage</strong></td>
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<tr>
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<td>Entry</td>
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<tr>
<td>$9.10</td>
<td>$18,920</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Car Hop
- Deli Clerk (Delicatessen Clerk)
- Deli Worker (Delicatessen Worker)
- Dietary Aide
- Food Service Assistant
- Food Service Worker
- Prep Cook (Preparation Cook)
- Sandwich Artist
- School Cafeteria Cook
- Server

### Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
27-1021 Commercial and Industrial Designers

Develop and design manufactured products, such as cars, home appliances, and children's toys. Combine artistic talent with research on product use, marketing, and materials to create the most functional and appealing product design.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Research production specifications, costs, production materials and manufacturing methods and provide cost estimates and itemized production requirements. Confer with engineering, marketing, production, or sales departments, or with customers, to establish and evaluate design concepts for manufactured products. Modify and refine designs, using working models, to conform with customer specifications, production limitations, or changes in design trends. Present designs and reports to customers or design committees for approval and discuss need for modification. Coordinate the look and function of product lines. Investigate product characteristics such as the product's safety and handling qualities, its market appeal, how efficiently it can be produced, and ways of distributing, using and maintaining it. Read publications, attend showings, and study competing products and design styles and motifs to obtain perspective and generate design concepts. Prepare sketches of ideas, detailed drawings, illustrations, artwork, or blueprints, using drafting instruments, paints and brushes, or computer-aided design equipment. Participate in new product planning or market research, including studying the potential need for new products. Evaluate feasibility of design ideas, based on factors such as appearance, safety, function, serviceability, budget, production costs/methods, and market characteristics. Direct and coordinate the fabrication of models or samples and the drafting of working drawings and specification sheets from sketches. Develop manufacturing procedures and monitor the manufacture of their designs in a factory to improve operations and product quality. Supervise assistants' work throughout the design process. Advise corporations on issues involving corporate image projects or problems. Fabricate models or samples in paper, wood, glass, fabric, plastic, metal, or other materials, using hand or power tools. Design graphic material for use as ornamentation, illustration, or advertising on manufactured materials and packaging or containers. Develop industrial standards and regulatory guidelines.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<td>Experienced $38.68</td>
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<td></td>
<td>Annual Growth Rate: 1.18%</td>
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<tr>
<td>Entry $21.16</td>
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<td>Annual $44,020</td>
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<tr>
<td>$80,460</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Design Engineer
- Designer
- Engineer
- Industrial Designer
- Mechanical Designer
- Product Design Engineer
- Product Designer
- Product Development Engineer
- Product Engineer
- Project Engineer

Post-Secondary Institutions with Programs
- Auburn University
- Chattahoochee Valley Community College
- George C Wallace State Community College-Hanceville
- Jacksonville State University
- James H Faulkner State Community College
- John C Calhoun State Community College
- Lawson State Community College-Birmingham Campus
- Northwest-Shoals Community College
- Oakwood University

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
53-2012 Commercial Pilots
Pilot and navigate the flight of fixed-winged aircraft on nonscheduled air carrier routes, or helicopters. Requires Commercial Pilot certificate. Includes charter pilots with similar certification, and air ambulance and air tour pilots.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Obtain and review data such as load weights, fuel supplies, weather conditions, and flight schedules to determine flight plans and identify needed changes. Plan flights according to government and company regulations, using aeronautical charts and navigation instruments. Consider airport altitudes, outside temperatures, plane weights, and wind speeds and directions to calculate the speed needed to become airborne. Choose routes, altitudes, and speeds that will provide the fastest, safest, and smoothest flights. Supervise other crew members. Coordinate flight activities with ground crews and air traffic control, and inform crew members of flight and test procedures. Check aircraft prior to flights to ensure that the engines, controls, instruments, and other systems are functioning properly. Co-pilot aircraft or perform captain's duties as required. Write specified information in flight records, such as flight times, altitudes flown, and fuel consumption. Contact control towers for takeoff clearances, arrival instructions, and other information, using radio equipment. Perform minor aircraft maintenance and repair work, or arrange for major maintenance. Check baggage or cargo to ensure that it has been loaded correctly. File instrument flight plans with air traffic control so that flights can be coordinated with other air traffic. Request changes in altitudes or routes as circumstances dictate. Use instrumentation to pilot aircraft when visibility is poor. Order changes in fuel supplies, loads, routes, or schedules to ensure safety of flights. Monitor engine operation, fuel consumption, and functioning of aircraft systems during flights. Start engines, operate controls, and pilot airplanes to transport passengers, mail, or freight according to flight plans, regulations, and procedures. Pilot airplanes or helicopters over farmlands at low altitudes to dust or spray fields with fertilizers, fungicides, or pesticides. Teach company regulations and procedures to other pilots. Instruct other pilots and student pilots in aircraft operations. Plan and formulate flight activities and test schedules and prepare flight evaluation reports. Fly with other pilots or pilot-license applicants to evaluate their proficiency. Check the flight performance of new and experimental planes. Rescue and evacuate injured persons. Conduct in-flight tests and evaluations at specified altitudes and in all types of weather to determine the receptivity and other characteristics of equipment and systems.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
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<td>Experienced</td>
</tr>
<tr>
<td></td>
<td>$56,130</td>
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<td>$86,460</td>
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<td></td>
<td>$101,620</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Captain
Charter Pilot
Check Airman
Chief Pilot
Commercial Pilot
EMS Helicopter Pilot (Emergency Medical Service Helicopter Pilot)
First Officer
Helicopter Pilot
Line Pilot
Pilot

Post-Secondary Institutions with Programs
Wallace State Community College - Hanceville
Community Health Workers

Assist individuals and communities to adopt healthy behaviors. Conduct outreach for medical personnel or health organizations to implement programs in the community that promote, maintain, and improve individual and community health. May provide information on available resources, provide social support and informal counseling, advocate for individuals and community health needs, and provide services such as first aid and blood pressure screening. May collect data to help identify community health needs.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Monitor nutrition of children, elderly, or other high-risk groups. Administer immunizations or other basic preventive treatments. Advise clients or community groups on issues related to self-care, such as diabetes management. Identify the particular health care needs of individuals in a community or target area. Interpret, translate, or provide cultural mediation related to health services or information for community members. Advise clients or community groups on issues related to social or intellectual development, such as education, childcare, or problem solving. Collect information from individuals to compile vital statistics about the general health of community members. Teach appropriate parenting behaviors to individuals or families. Develop plans or formal contracts for individuals, families, or community groups to improve overall health. Identify or contact members of high-risk or otherwise targeted groups, such as members of minority populations, low-income populations, or pregnant women. Maintain updated client records with plans, notes, appropriate forms, or related information. Advise clients or community groups on issues related to sanitation or hygiene, such as flossing or hand washing. Advise clients or community groups on issues related to improving general health, such as diet or exercise. Advise clients or community groups on issues related to risk or prevention of conditions such as lead poisoning, human immunodeficiency virus (HIV), prenatal substance abuse, or domestic violence. Advise clients or community groups on issues related to diagnostic screenings, such as breast cancer screening, pap smears, glaucoma tests, or diabetes screenings. Perform basic diagnostic procedures, such as blood pressure screening, breast cancer screening, or communicable disease screening. Refer community members to needed health services. Provide basic health services, such as first aid. Teach classes or otherwise disseminate medical or dental health information to school groups, community groups, or targeted families or individuals, in a manner consistent with cultural norms. Distribute flyers, brochures, or other informational or educational documents to inform members of a targeted community. Contact clients in person, by phone, or in writing to ensure they have completed required or recommended actions.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$12.73</td>
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<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$20.42</td>
<td>$42,470</td>
</tr>
<tr>
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<td>Experienced</td>
</tr>
<tr>
<td>$24.27</td>
<td>$50,470</td>
</tr>
</tbody>
</table>

2016 Estimated Employment: 960
2026 Projected Employment: 1,120
Average Total Openings: 140
Annual Growth Rate: 1.55%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Apprise Counselor
Assistant Director of Nutrition and Wellness Programs
Chief Program Officer
Community Health Outreach Worker
Community Health Program Coordinator
Community Health Program Representative (Community Health Program Rep)
Community Health Promoter
Community Health Worker (CHW)
Community Nutrition Educator
HIV CTS Specialist (Human Immunodeficiency Virus Counseling and Testing Services Specialist)

Post-Secondary Institutions with Programs
Oakwood University
Tuskegee University
University of Alabama - Birmingham

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Compensation, Benefits, and Job Analysis Specialists**

Conduct programs of compensation and benefits and job analysis for employer. May specialize in specific areas, such as position classification and pension programs.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Provide advice on the resolution of classification and salary complaints. Evaluate job positions, determining classification, exempt or non-exempt status, and salary. Research job and worker requirements, structural and functional relationships among jobs and occupations, and occupational trends. Advise managers and employees on state and federal employment regulations, collective agreements, benefit and compensation policies, personnel procedures, and classification programs. Prepare occupational classifications, job descriptions, and salary scales. Advise staff of individuals' qualifications. Ensure company compliance with federal and state laws, including reporting requirements. Plan, develop, evaluate, improve, and communicate methods and techniques for selecting, promoting, compensating, evaluating, and training workers. Consult with or serve as a technical liaison between business, industry, government, and union officials. Administer employee insurance, pension and savings plans, working with insurance brokers and plan carriers. Prepare research results for publication in form of journals, books, manuals, and film. Prepare reports, such as organization and flow charts, and career path reports to summarize job analysis and evaluation and compensation analysis information. Assist in preparing and maintaining personnel records and handbooks. Perform multifactor data and cost analyses that may be used in areas such as support of collective bargaining agreements. Assess need for and develop job analysis instruments and materials. Develop, implement, administer and evaluate personnel and labor relations programs, including performance appraisal, affirmative action, and employment equity programs. Work with the Department of Labor and promote its use with employers. Observe, interview, and survey employees and conduct focus group meetings to collect job, organizational, and occupational information. Analyze organizational, occupational, and industrial data to facilitate organizational functions and provide technical information to business, industry, and government. Research employee benefit and health and safety practices and recommend changes or modifications to existing policies. Negotiate collective agreements on behalf of employers or workers, and mediate labor disputes and grievances. Review occupational data on Alien Employment Certification Applications to determine the appropriate occupational title and code, and provide local offices with information about immigration and occupations. Plan and develop curricula and materials for training programs and conduct training. Speak at conferences and events to promote apprenticeships and related training programs.

**License:** License Not Required.

**Outlook:** Satisfactory

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### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$20.52</td>
<td>$42,680</td>
<td>670</td>
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<td>Average</td>
<td>$30.94</td>
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<tr>
<td>Experienced</td>
<td>$36.15</td>
<td>$75,180</td>
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</table>

**Average Total Openings:** 60

**Annual Growth Rate:** 0.58%

For an explanation on omitted data, see the Missing Data section in the introduction.

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**Related Occupations**

Benefits Administrator
Benefits Analyst
Benefits Specialist
Compensation Analyst
Compensation Consultant
Compensation Coordinator
Compensation Specialist
Compensation/Benefits Specialist
Personnel Specialist
Position Classification Specialist

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**Post-Secondary Institutions with Programs**

- Athens State University
- Auburn University
- Auburn University - Montgomery
- Columbia Southern University
- Faulkner University
- Troy University
- University of Alabama - Huntsville

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2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Computer and Information Research Scientists

Conduct research into fundamental computer and information science as theorists, designers, or inventors. Develop solutions to problems in the field of computer hardware and software.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

Tasks: Design computers and the software that runs them. Assign or schedule tasks to meet work priorities and goals. Analyze problems to develop solutions involving computer hardware and software. Meet with managers, vendors, and others to solicit cooperation and resolve problems. Apply theoretical expertise and innovation to create or apply new technology, such as adapting principles for applying computers to new uses. Conduct logical analyses of business, scientific, engineering, and other technical problems, formulating mathematical models of problems for solution by computers. Develop and interpret organizational goals, policies, and procedures. Evaluate project plans and proposals to assess feasibility issues. Participate in multidisciplinary projects in areas such as virtual reality, human-computer interaction, or robotics. Direct daily operations of departments, coordinating project activities with other departments. Develop performance standards, and evaluate work in light of established standards. Maintain network hardware and software, direct network security measures, and monitor networks to ensure availability to system users. Approve, prepare, monitor, and adjust operational budgets. Participate in staffing decisions and direct training of subordinates. Consult with users, management, vendors, and technicians to determine computing needs and system requirements.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>Annual Wage</td>
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<td>$39.67 Entry</td>
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<tr>
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<td>$67.97 Average</td>
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<td>$82.12 Experienced</td>
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<td>$170,810</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Computer Scientist
Control System Computer Scientist
Scientific Programmer Analyst

Post-Secondary Institutions with Programs

Faulkner University
University of Alabama in Huntsville
University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Computer and Information Systems Managers

Plan, direct, or coordinate activities in such fields as electronic data processing, information systems, systems analysis, and computer programming.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Manage backup, security and user help systems. Direct daily operations of department, analyzing workflow, establishing priorities, developing standards and setting deadlines. Assign and review the work of systems analysts, programmers, and other computer-related workers. Provide users with technical support for computer problems. Meet with department heads, managers, supervisors, vendors, and others, to solicit cooperation and resolve problems. Prepare and review operational reports or project progress reports. Stay abreast of advances in technology. Review project plans to plan and coordinate project activity. Review and approve all systems charts and programs prior to their implementation. Develop and interpret organizational goals, policies, and procedures. Consult with users, management, vendors, and technicians to assess computing needs and system requirements. Purchase necessary equipment. Control operational budget and expenditures. Develop computer information resources, providing for data security and control, strategic computing, and disaster recovery. Recruit, hire, train and supervise staff, or participate in staffing decisions. Evaluate the organization's technology use and needs and recommend improvements, such as hardware and software upgrades. Evaluate data processing proposals to assess project feasibility and requirements.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<th>Alabama Projections</th>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$37.65</td>
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<tr>
<td>Average</td>
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<tr>
<td>Experienced</td>
<td>$70.45</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Application Development Director
- Computing Services Director
- Data Processing Manager
- Information Systems Director (IS Director)
- Information Systems Manager (IS Manager)
- Information Systems Supervisor (IS Supervisor)
- Information Technology Director (IT Director)
- Information Technology Manager (IT Manager)
- MIS Director (Management Information Systems Director)
- Technical Services Manager

### Post-Secondary Institutions with Programs
- Alabama A & M University
- Alabama State University
- Auburn University
- Auburn University at Montgomery
- Columbia Southern University
- Concordia College Alabama
- Faulkner University
- Herzing University-Birmingham
- Jacksonville State University
- Miles College
- Samford University
- South University-Montgomery
- Talladega College
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama at Birmingham
- University of Alabama in Huntsville
- University of Mobile
- University of North Alabama
- University of South Alabama
- University of West Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
17-2061  Computer Hardware Engineers
Research, design, develop, or test computer or computer-related equipment for commercial, industrial, military, or scientific use. May supervise the manufacturing and installation of computer or computer-related equipment and components.

Education:  Most of these occupations typically require a four-year bachelor's degree.
OJT:  Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.
Tasks:  Direct technicians, engineering designers or other technical support personnel as needed. Confer with engineering staff and consult specifications to evaluate interface between hardware and software and operational and performance requirements of overall system. Provide technical support to designers, marketing and sales departments, suppliers, engineers and other team members throughout the product development and implementation process. Test and verify hardware and support peripherals to ensure that they meet specifications and requirements, by recording and analyzing test data. Store, retrieve, and manipulate data for analysis of system capabilities and requirements. Design and develop computer hardware and support peripherals, including central processing units (CPUs), support logic, microprocessors, custom integrated circuits, and printers and disk drives. Update knowledge and skills to keep up with rapid advancements in computer technology. Build, test, and modify product prototypes using working models or theoretical models constructed with computer simulation. Monitor functioning of equipment and make necessary modifications to ensure system operates in conformance with specifications. Analyze user needs and recommend appropriate hardware. Select hardware and material, assuring compliance with specifications and product requirements. Assemble and modify existing pieces of equipment to meet special needs. Write detailed functional specifications that document the hardware development process and support hardware introduction. Analyze information to determine, recommend, and plan layout, including type of computers and peripheral equipment modifications. Provide training and support to system designers and users. Specify power supply requirements and configuration, drawing on system performance expectations and design specifications. Evaluate factors such as reporting formats required, cost constraints, and need for security restrictions to determine hardware configuration. Recommend purchase of equipment to control dust, temperature, and humidity in area of system installation.

License:  License Not Required.
Outlook:  Satisfactory

Alabama Employment Outlook

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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<td>$59.09</td>
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<tr>
<td></td>
<td>$122,910</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Design Engineer
Engineer
Field Service Engineer
Hardware Design Engineer
Hardware Engineer
Network Engineer
Project Engineer
Senior Hardware Engineer
Systems Engineer
Systems Integration Engineer

Post-Secondary Institutions with Programs
University of Alabama - Birmingham
University of Alabama - Huntsville
University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Computer Network Support Specialists

Analyze, test, troubleshoot, and evaluate existing network systems, such as local area network (LAN), wide area network (WAN), and Internet systems or a segment of a network system. Perform network maintenance to ensure networks operate correctly with minimal interruption.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Back up network data. Document help desk requests and resolutions. Maintain logs of network activity. Provide telephone support related to networking or connectivity issues. Analyze network data to determine network usage, disk space availability, or server function. Research hardware or software products to meet technical networking or security needs. Document network support activities. Create or update technical documentation for network installations or changes to existing installations. Configure security settings or access permissions for groups or individuals. Evaluate local area network (LAN) or wide area network (WAN) performance data to ensure sufficient availability or speed, to identify network problems, or for disaster recovery purposes. Monitor industry websites or publications for information about patches, releases, viruses, or potential problem identification. Train users in procedures related to network applications software or related systems. Perform routine maintenance or standard repairs to networking components or equipment. Troubleshoot network or connectivity problems for users or user groups. Analyze and report computer network security breaches or attempted breaches. Test repaired items to ensure proper operation. Identify the causes of networking problems, using diagnostic testing software and equipment. Create or revise user instructions, procedures, or manuals. Test computer software or hardware, using standard diagnostic testing equipment and procedures. Install new hardware or software systems or components, ensuring integration with existing network systems. Configure and define parameters for installation or testing of local area network (LAN), wide area network (WAN), hubs, routers, switches, controllers, multiplexers, or related networking equipment. Install or repair network cables, including fiber optic cables. Install network software, including security or firewall software. Configure wide area network (WAN) or local area network (LAN) routers or related equipment. Install and configure wireless networking equipment. Run monthly network reports.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
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<td>Average</td>
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<tr>
<td>Experienced</td>
<td>$35.18</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Computer Network Specialist
- IT Consultant (Information Technology Consultant)
- Network Engineer
- Network Specialist
- Network Support Specialist
- Network Technical Analyst
- Network Technician
- Personal Computer Network Analyst
- Senior IT Assistant (Senior Information Technology Assistant)
- Systems Specialist

Post-Secondary Institutions with Programs
- Alabama A & M University
- Alabama State University
- Athens State University
- Auburn University
- Columbia Southern University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of Mobile
- University of North Alabama
- University of South Alabama
- University of West Alabama

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic

Develop programs to control machining or processing of metal or plastic parts by automatic machine tools, equipment, or systems.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Align and secure pattern film on reference tables of optical programmers, and observe enlarger scope views of printed circuit boards. Draw machine tool paths on pattern film, using colored markers and following guidelines for tool speed and efficiency. Sort shop orders into groups to maximize materials utilization and minimize machine setup time. Determine reference points, machine cutting paths, or hole locations, and compute angular and linear dimensions, radii, and curvatures. Enter computer commands to store or retrieve parts patterns, graphic displays, or programs that transfer data to other media. Compare encoded tapes or computer printouts with original part specifications and blueprints to verify accuracy of instructions. Revise programs or tapes to eliminate errors, and retest programs to check that problems have been solved. Prepare geometric layouts from graphic displays, using computer-assisted drafting software or drafting instruments and graph paper. Analyze job orders, drawings, blueprints, specifications, printed circuit board pattern films, and design data to calculate dimensions, tool selection, machine speeds, and feed rates. Observe machines on trial runs or conduct computer simulations to ensure that programs and machinery will function properly and produce items that meet specifications. Determine the sequence of machine operations, and select the proper cutting tools needed to machine workpieces into the desired shapes. Write instruction sheets and cutter lists for a machine's controller to guide setup and encode numerical control tapes. Write programs in the language of a machine's controller and store programs on media such as punch tapes, magnetic tapes, or disks. Modify existing programs to enhance efficiency. Enter coordinates of hole locations into program memories by depressing pedals or buttons of programmers. Perform preventative maintenance or minor repairs on machines.

License: License Not Required.

Outlook: Excellent

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
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<td>$21.87 $45,490</td>
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<tr>
<td>Experienced</td>
<td>$25.74 $53,530</td>
</tr>
</tbody>
</table>

2016 Estimated Employment: 610
2026 Projected Employment: 830
Average Total Openings: 90
Annual Growth Rate: 3.13%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
CAD CAM Programmer (Computer-Aided Design
Computer-Aided Manufacturing Programmer)
Computer Numerical Control Machine Operator (CNC Machine Operator)
Computer Numerical Control Machining Center Operator (CNC Machining Center Operator)
Computer Numerical Control Machinist (CNC Machinist)
Computer Numerical Control Operator (CNC Operator)
Computer Numerical Control Programmer (CNC Programmer)
Machine Shop Lead Man
Machining Manager
Process Engineer
Programmer

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Computer Systems Analysts

Analyze science, engineering, business, and other data processing problems to implement and improve computer systems. Analyze user requirements, procedures, and problems to automate or improve existing systems and review computer system capabilities, workflow, and scheduling limitations. May analyze or recommend commercially available software.

**Education:**
Most of these occupations typically require a four-year bachelor's degree.

**OJT:**
Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
Use object-oriented programming languages, as well as client and server applications development processes and multimedia and Internet technology. Review and analyze computer printouts and performance indicators to locate code problems, and correct errors by correcting codes. Use the computer in the analysis and solution of business problems, such as development of integrated production and inventory control and cost analysis systems. Provide staff and users with assistance solving computer-related problems, such as malfunctions and program problems. Specify inputs accessed by the system and plan the distribution and use of the results. Test, maintain, and monitor computer programs and systems, including coordinating the installation of computer programs and systems. Troubleshoot program and system malfunctions to restore normal functioning. Develop, document and revise system design procedures, test procedures, and quality standards. Confer with clients regarding the nature of the information processing or computation needs a computer program is to address. Consult with management to ensure agreement on system principles. Coordinate and link the computer systems within an organization to increase compatibility and so information can be shared. Expand or modify system to serve new purposes or improve work flow. Read manuals, periodicals, and technical reports to learn how to develop programs that meet staff and user requirements. Supervise computer programmers or other systems analysts or serve as project leaders for particular systems projects. Assess the usefulness of pre-developed application packages and adapt them to a user environment. Train staff and users to work with computer systems and programs. Interview or survey workers, observe job performance or perform the job to determine what information is processed and how it is processed. Recommend new equipment or software packages. Analyze information processing or computation needs and plan and design computer systems, using techniques such as structured analysis, data modeling and information engineering. Define the goals of the system and devise flow charts and diagrams describing logical operational steps of programs. Determine computer software or hardware needed to set up or alter system. Prepare cost-benefit and return-on-investment analyses to aid in decisions on system implementation.

**License:**
License Not Required.

**Outlook:**
Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$28.04</td>
<td>$58,330</td>
<td>3,770</td>
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<tr>
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<td>$39.41</td>
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<td>$45.09</td>
<td>$93,780</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Applications Analyst
- Business Analyst
- Business Systems Analyst
- Computer Analyst
- Computer Systems Analyst
- Computer Systems Consultant
- Information Systems Analyst (ISA)
- Information Technology Analyst (IT Analyst)
- System Analyst
- Systems Analyst

### Post-Secondary Institutions with Programs

- Herzing University-Birmingham
- Miles College
- Oakwood University
- Remington College-Mobile Campus

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
15-1151 Computer User Support Specialists

Provide technical assistance to computer users. Answer questions or resolve computer problems for clients in person, or via telephone or electronically. May provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Maintain records of daily data communication transactions, problems and remedial actions taken, or installation activities. Refer major hardware or software problems or defective products to vendors or technicians for service. Inspect equipment and read order sheets to prepare for delivery to users. Enter commands and observe system functioning to verify correct operations and detect errors. Answer user inquiries regarding computer software or hardware operation to resolve problems. Read technical manuals, confer with users, or conduct computer diagnostics to investigate and resolve problems or to provide technical assistance and support. Modify and customize commercial programs for internal needs. Prepare evaluations of software or hardware, and recommend improvements or upgrades. Oversee the daily performance of computer systems. Develop training materials and procedures, or train users in the proper use of hardware or software. Set up equipment for employee use, performing or ensuring proper installation of cables, operating systems, or appropriate software. Install and perform minor repairs to hardware, software, or peripheral equipment, following design or installation specifications. Hire, supervise, and direct workers engaged in special project work, problem solving, monitoring, and installing data communication equipment and software. Conduct office automation feasibility studies, including workflow analysis, space design, or cost comparison analysis. Read trade magazines and technical manuals, or attend conferences and seminars to maintain knowledge of hardware and software. Confer with staff, users, and management to establish requirements for new systems or modifications.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<th></th>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

- Computer Specialist
- Computer Support Specialist
- Computer Technician
- Desktop Support Technician
- Help Desk Analyst
- Help Desk Technician
- Information Technology Specialist (IT Specialist)
- Network Technician
- Support Specialist
- Technical Support Specialist

Post-Secondary Institutions with Programs

Brown Mackie College-Birmingham

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Computer-Controlled Machine Tool Operators, Metal and Plastic

Operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic work pieces.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Stop machines to remove finished workpieces or to change tooling, setup, or workpiece placement, according to required machining sequences. Measure dimensions of finished workpieces to ensure conformance to specifications, using precision measuring instruments, templates, and fixtures. Maintain machines and remove and replace broken or worn machine tools, using hand tools. Control coolant systems. Clean machines, tooling, or parts, using solvents or solutions and rags. Lift workpieces to machines manually or with hoists or cranes. Listen to machines during operation to detect sounds such as those made by dull cutting tools or excessive vibration and adjust machines to compensate for problems. Check to ensure that workpieces are properly lubricated and cooled during machine operation. Transfer commands from servers to computer numerical control (CNC) modules, using computer network links. Confer with supervisors or programmers to resolve machine malfunctions or production errors or to obtain approval to continue production. Set up and operate computer-controlled machines or robots to perform one or more machine functions on metal or plastic workpieces. Lay out and mark areas of parts to be shot-peened and fill hoppers with shot. Stack or load finished items or place items on conveyor systems. Monitor machine operation and control panel displays and compare readings to specifications to detect malfunctions. Mount, install, align, and secure tools, attachments, fixtures, and workpieces on machines, using hand tools and precision measuring instruments. Remove and replace dull cutting tools. Review program specifications or blueprints to determine and set machine operations and sequencing, finished workpiece dimensions, or numerical control sequences. Examine electronic components for defects or completeness of laser-beam trimming, using microscopes. Insert control instructions into machine control units to start operation. Enter commands or load control media, such as tapes, cards, or disks, into machine controllers to retrieve programmed instructions. Adjust machine feed and speed, change cutting tools, or adjust machine controls when automatic programming is faulty or if machines malfunction. Implement changes to machine programs and enter new specifications, using computers. Modify cutting programs to account for problems encountered during operation and save modified programs. Write simple programs for computer-controlled machine tools. Input initial part dimensions into machine control panels. Set up future jobs while machines are operating. Calculate machine speed and feed ratios and the size and position of cuts.

License: License Not Required.

Outlook: Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
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<tr>
<td></td>
<td>2016 Estimated Employment: 1,990</td>
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<tr>
<td>Entry</td>
<td>2026 Projected Employment: 2,400</td>
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<td>Annual Wage</td>
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<td>$20.60</td>
<td>$42,860</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Brake Press Operator
- CNC Lathe Operator
- CNC Machine Operator
- CNC Machinist
- CNC Operator
- CNC Set-Up and Operator
- Machine Operator
- Machinist

**Post-Secondary Institutions with Programs**

- Central Alabama Community College
- Northwest-Shoals Community College - Muscle Shoals
- Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-4011 Construction and Building Inspectors

Inspect structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations. Inspections may be general in nature or may be limited to a specific area, such as electrical systems or plumbing.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Maintain daily logs and supplement inspection records with photographs. Inspect bridges, dams, highways, buildings, wiring, plumbing, electrical circuits, sewers, heating systems, or foundations during and after construction for structural quality, general safety, or conformance to specifications and codes. Inspect facilities or installations to determine their environmental impact. Conduct environmental hazard inspections to identify or quantify problems such as asbestos, poor air quality, water contamination, or other environmental hazards. Evaluate premises for cleanliness, such as proper garbage disposal or lack of vermin infestation. Review and interpret plans, blueprints, site layouts, specifications, or construction methods to ensure compliance to legal requirements and safety regulations. Evaluate project details to ensure adherence to environmental regulations. Estimate cost of completed work or of needed renovations or upgrades. Measure dimensions and verify level, alignment, or elevation of structures or fixtures to ensure compliance to building plans and codes. Conduct inspections, using survey instruments, metering devices, tape measures, or test equipment. Monitor installation of plumbing, wiring, equipment, or appliances to ensure that installation is performed properly and is in compliance with applicable regulations. Confer with owners, violators, or authorities to explain regulations or recommend remedial actions. Issue permits for construction, relocation, demolition, or occupancy. Approve building plans that meet required specifications. Sample and test air to identify gasses, such as bromine, ozone, or sulfur dioxide, or particulates, such as mold, dust, or allergens. Inspect and monitor construction sites to ensure adherence to safety standards, building codes, or specifications. Monitor construction activities to ensure that environmental regulations are not violated. Train, direct, or supervise other construction inspectors. Examine lifting or conveying devices, such as elevators, escalators, moving sidewalks, hoists, inclined railways, ski lifts, or amusement rides to ensure safety and proper functioning.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
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</tr>
</thead>
<tbody>
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<td><strong>Annual Wage</strong></td>
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<tr>
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<td>Experienced</td>
<td>$29.85</td>
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<td><strong>2016 Estimated Employment:</strong></td>
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<tr>
<td><strong>Annual Growth Rate:</strong></td>
<td>0.67%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Building Code Administrator
Building Inspection Engineer
Building Inspector
Building Official
Combination Building Inspector
Construction Inspector
Construction Materials Testing Technician
Elevator Inspector
Inspector
Plumbing Inspector

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-2061 Construction Laborers

Perform tasks involving physical labor at construction sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, and clean up rubble, debris and other waste materials. May assist other craft workers.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Clean or prepare construction sites to eliminate possible hazards. Provide assistance to craft workers, such as carpenters, plasterers, or masons. Control traffic passing near, in, or around work zones. Read plans, instructions, or specifications to determine work activities. Measure, mark, or record openings or distances to layout areas where construction work will be performed. Dig ditches or trenches, backfill excavations, or compact and level earth to grade specifications, using picks, shovels, pneumatic tampers, or rakes. Place, consolidate, or protect case-in-place concrete or masonry structures. Mix ingredients to create compounds for covering or cleaning surfaces. Mop, brush, or spread paints, cleaning solutions, or other compounds over surfaces to clean them or to provide protection. Tend pumps, compressors, or generators to provide power for tools, machinery, or equipment or to heat or move materials, such as asphalt. Load, unload, or identify building materials, machinery, or tools, distributing them to the appropriate locations, according to project plans or specifications. Signal equipment operators to facilitate alignment, movement, or adjustment of machinery, equipment, or materials. Spray materials, such as water, sand, steam, vinyl, paint, or stucco, through hoses to clean, coat, or seal surfaces. Grind, scrape, sand, or polish surfaces, such as concrete, marble, terrazzo, or wood flooring, using abrasive tools or machines. Position or dismantle forms for pouring concrete, using saws, hammers, nails, or bolts. Identify, pack, or transport hazardous or radioactive materials. Smooth or finish freshly poured cement or concrete, using floats, trowels, screeds, or powered cement finishing tools. Mix, pour, or spread concrete, using portable cement mixers. Lubricate, clean, or repair machinery, equipment, or tools. Apply caulking compounds by hand or caulking guns to protect against entry of water or air. Raze buildings or salvage useful materials. Position, join, align, or seal structural components, such as concrete wall sections or pipes. Operate jackhammers or drills to break up concrete or pavement. Perform construction laborer duties at green building sites, such as renewable energy plants or wind turbine installations. Install sewer, water, or storm drain pipes, using pipe-laying machinery or laser guidance equipment.

License: License Not Required.

Outlook: Satisfactory

Alabama Wage Data

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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<tr>
<td>Entry</td>
<td>$10.23</td>
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<tr>
<td>Average</td>
<td>$14.12</td>
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<tr>
<td>Experienced</td>
<td>$16.06</td>
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</table>

2016 Estimated Employment: 10,850

2026 Projected Employment: 11,670

Average Total Openings: 1,215

Annual Growth Rate: 0.73%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

- Construction Laborer
- Construction Worker
- Curb and Gutter Laborer
- Drain Layer
- Drop Crew Laborer
- Helper
- Laborer
- Post Framer
- Skill Labor
- Union Laborer

Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Construction Managers

Plan, direct, or coordinate, usually through subordinate supervisory personnel, activities concerned with the construction and maintenance of structures, facilities, and systems. Participate in the conceptual development of a construction project and oversee its organization, scheduling, budgeting, and implementation. Includes managers in specialized construction fields, such as carpentry or plumbing.

Education: Most of these occupations typically require a four-year bachelor’s degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks:
- Direct and supervise construction or related workers. Confer with supervisory personnel, owners, contractors, or design professionals to discuss and resolve matters such as work procedures, complaints, or construction problems. Plan, schedule, or coordinate construction project activities to meet deadlines. Plan, organize, or direct activities concerned with the construction or maintenance of structures, facilities, or systems.
- Determine labor requirements for dispatching workers to construction sites. Requisition supplies or materials to complete construction projects. Study job specifications to determine appropriate construction methods. Inspect or review projects to monitor compliance with building and safety codes or other regulations. Inspect or review projects to monitor compliance with environmental regulations. Contract or oversee craft work, such as painting or plumbing. Develop or implement quality control programs. Develop or implement environmental protection programs. Evaluate construction methods and determine cost-effectiveness of plans, using computer models. Implement new or modified plans in response to delays, bad weather, or construction site emergencies.
- Interpret and explain plans and contract terms to representatives of the owner or developer, including administrative staff, workers, or clients. Secure third-party verification from sources such as Leadership in Energy Efficient Design (LEED) to ensure responsible design and building activities or to achieve favorable LEED ratings for building projects. Investigate damage, accidents, or delays at construction sites to ensure that proper construction procedures are being followed. Prepare contracts or negotiate revisions to contractual agreements with architects, consultants, clients, suppliers, or subcontractors. Prepare and submit budget estimates, progress reports, or cost tracking reports. Implement training programs on environmentally responsible building topics to update employee skills and knowledge.
- Perform, or contract others to perform, pre-building assessments, such as conceptual cost estimating, rough order of magnitude estimating, feasibility, or energy efficiency, environmental, and sustainability assessments. Apply for and obtain all necessary permits or licenses. Develop construction budgets to compare green and non-green construction alternatives, in terms of short-term costs, long-term costs, or environmental impacts. Apply green building strategies to reduce energy costs or minimize carbon output or other sources of harm to the environment. Direct acquisition of land for construction projects.

License: Annual License Fee: $235.00 Application Package Fee: $25.00 New Active License: $350.00 New License Application Processing Fee: $100.00 Renewal Active License: $250.00

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$28.32</td>
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<tr>
<td></td>
<td>$110,070</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Concrete Foreman
- Construction Area Manager
- Construction Foreman
- Construction Manager
- Construction Superintendent
- General Contractor
- Job Superintendent
- Project Executive
- Project Manager
- Project Superintendent

Post-Secondary Institutions with Programs
- Alabama A & M University
- Jefferson State Community College
- Tuskegee University

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Cooks, Restaurant
Prepare, season, and cook dishes such as soups, meats, vegetables, or desserts in restaurants. May order supplies, keep records and accounts, price items on menu, or plan menu.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Consult with supervisory staff to plan menus, taking into consideration factors such as costs and special event needs. Wash, peel, cut, and seed fruits and vegetables to prepare them for consumption. Coordinate and supervise work of kitchen staff. Ensure freshness of food and ingredients by checking for quality, keeping track of old and new items, and rotating stock. Carve and trim meats such as beef, veal, ham, pork, and lamb for hot or cold service, or for sandwiches. Bake breads, rolls, cakes, and pastries. Season and cook food according to recipes or personal judgment and experience. Turn or stir foods to ensure even cooking. Portion, arrange, and garnish food, and serve food to waiters or patrons. Bake, roast, broil, and steam meats, fish, vegetables, and other foods. Prepare relishes and hors d'oeuvres. Inspect and clean food preparation areas, such as equipment and work surfaces, or serving areas to ensure safe and sanitary food-handling practices. Substitute for or assist other cooks during emergencies or rush periods. Weigh, measure, and mix ingredients according to recipes or personal judgment, using various kitchen utensils and equipment. Estimate expected food consumption, requisition or purchase supplies, or procure food from storage. Keep records and accounts. Butcher and dress animals, fowl, or shellfish, or cut and bone meat prior to cooking. Ensure food is stored and cooked at correct temperature by regulating temperature of ovens, broilers, grills, and roasters. Observe and test foods to determine if they have been cooked sufficiently, using methods such as tasting, smelling, or piercing them with utensils. Plan and price menu items.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Appetizer Preparer
Back Line Cook
Banquet Cook
Breakfast Cook
Broil Cook
Cook
Fry Cook
Grill Cook
Line Cook
Prep Cook (Preparation Cook)

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
13-1051 Cost Estimators

Prepare cost estimates for product manufacturing, construction projects, or services to aid management in bidding on or determining price of product or service. May specialize according to particular service performed or type of product manufactured.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Prepare estimates used by management for purposes such as planning, organizing, and scheduling work. Prepare cost and expenditure statements and other necessary documentation at regular intervals for the duration of the project. Confer with engineers, architects, owners, contractors, and subcontractors on changes and adjustments to cost estimates. Establish and maintain tendering process, and conduct negotiations. Analyze blueprints and other documentation to prepare time, cost, materials, and labor estimates. Consult with clients, vendors, personnel in other departments, or construction foremen to discuss and formulate estimates and resolve issues. Assess cost effectiveness of products, projects or services, tracking actual costs relative to bids as the project develops. Review material and labor requirements to decide whether it is more cost-effective to produce or purchase components. Prepare estimates for use in selecting vendors or subcontractors. Collect historical cost data to estimate costs for current or future products. Set up cost monitoring and reporting systems and procedures.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<td>Annual Growth Rate: 0.98%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Acquisition Cost Estimator
Construction Estimator
Cost Analyst
Cost and Risk Analysis Manager
Cost Consultant
Cost Engineer
Cost Estimator
Estimator
Estimator Project Manager
Preconstruction Manager

Post-Secondary Institutions with Programs
Amridge University
Athens State University
Birmingham Southern College
Bishop State Community College
Central Alabama Community College
Columbia Southern University
Concordia College Alabama
Enterprise State Community College
George C Wallace Community College - Selma
Jacksonville State University
James H Faulkner State Community College
Jefferson State Community College
John C Calhoun State Community College
Lawson State Community College - Birmingham
Lurleen B Wallace Community College
Northeast Alabama Community College
Oakwood University
Shelton State Community College
Southern Union State Community College
Spring Hill College
University of Mobile
University of North Alabama
University of South Alabama
University of West Alabama
Wallace State Community College - Hanceville

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Couriers and Messengers

Pick up and deliver messages, documents, packages, and other items between offices or departments within an establishment or directly to other business concerns, traveling by foot, bicycle, motorcycle, automobile, or public conveyance.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Open, sort, and distribute incoming mail. Load vehicles with listed goods, ensuring goods are loaded correctly and taking precautions with hazardous goods. Collect, seal, and stamp outgoing mail, using postage meters and envelope sealers. Deliver messages and items, such as newspapers, documents, and packages, between establishment departments, and to other establishments and private homes. Walk, ride bicycles, drive vehicles, or use public conveyances to reach destinations to deliver messages or materials. Obtain signatures and payments, or arrange for recipients to make payments. Perform general office or clerical work such as filing materials, operating duplicating machines, or running errands. Sort items to be delivered according to the delivery route. Call by telephone to deliver verbal messages. Plan and follow the most efficient routes for delivering goods. Unload and sort items collected along delivery routes. Record information, such as items received and delivered and recipients’ responses to messages. Receive messages or materials to be delivered, and information on recipients, such as names, addresses, telephone numbers, and delivery instructions, communicated via telephone, two-way radio, or in person. Deliver and pick up medical records, lab specimens, and medications to and from hospitals and other medical facilities. Unload goods from large trucks, and load them onto smaller delivery vehicles. Check with home offices after completed deliveries to confirm deliveries and collections and to receive instructions for other deliveries. Perform routine maintenance on delivery vehicles, such as monitoring fluid levels and replenishing fuel.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<th>2,170</th>
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<td>Annual Growth Rate:</td>
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</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Courier
Driver
Laboratory Courier
Mail Carrier
Mail Clerk
Mailroom Courier
Messenger
Security Messenger
Transporter
Vehicle Delivery Worker

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Crane and Tower Operators

Operate mechanical boom and cable or tower and cable equipment to lift and move materials, machines, or products in many directions.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Inspect cables or grappling devices for wear and install or replace cables, as needed. Inspect and adjust crane mechanisms or lifting accessories to prevent malfunctions or damage. Review daily work or delivery schedules to determine orders, sequences of deliveries, or special loading instructions. Move levers, depress foot pedals, or turn dials to operate cranes, cherry pickers, electromagnets, or other moving equipment for lifting, moving, or placing loads. Weigh bundles, using floor scales, and record weights for company records. Clean, lubricate, and maintain mechanisms such as cables, pulleys, or grappling devices, making repairs as necessary. Load or unload bundles from trucks or move containers to storage bins, using moving equipment. Determine load weights and check them against lifting capacities to prevent overload. Inspect bundle packaging for conformance to regulations or customer requirements and remove and batch packaging tickets. Direct helpers engaged in placing blocking or outrigging under cranes. Direct truck drivers backing vehicles into loading bays and cover, uncover, or secure loads for delivery.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$15.04</td>
<td>$31,280</td>
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<td><strong>Average</strong></td>
<td><strong>Average</strong></td>
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<tr>
<td>$23.15</td>
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<tr>
<td><strong>Experienced</strong></td>
<td><strong>Experienced</strong></td>
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<tr>
<td>$27.21</td>
<td>$56,590</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Crane Operator
- Heavy Equipment Operator
- Machine Operator
- Material Handler
- Mobile Crane Operator
- Overhead Crane Operator
- Port Crane Operator
- Scrap Crane Operator
- Winchman/Crane Operator
- Woodyard Crane Operator

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Determine charges for services requested, collect deposits or payments, or arrange for billing. Confer with customers by telephone or in person to provide information about products or services, take or enter orders, cancel accounts, or obtain details of complaints. Complete contract forms, prepare change of address records, or issue service discontinuance orders, using computers. Obtain and examine all relevant information to assess validity of complaints and to determine possible causes, such as extreme weather conditions that could increase utility bills. Keep records of customer interactions or transactions, recording details of inquiries, complaints, or comments, as well as actions taken. Check to ensure that appropriate changes were made to resolve customers' problems. Order tests that could determine the causes of product malfunctions. Resolve customers' service or billing complaints by performing activities such as exchanging merchandise, refunding money, or adjusting bills. Compare disputed merchandise with original requisitions and information from invoices and prepare invoices for returned goods. Solicit sales of new or additional services or products. Review claims adjustments with dealers, examining parts claimed to be defective, and approving or disapproving dealers' claims. Refer unresolved customer grievances to designated departments for further investigation. Review insurance policy terms to determine whether a particular loss is covered by insurance. Contact customers to respond to inquiries or to notify them of claim investigation results or any planned adjustments. Recommend improvements in products, packaging, shipping, service, or billing methods and procedures to prevent future problems.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
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<tr>
<th><strong>2026 Projected Employment:</strong></th>
<th><strong>Average Total Openings:</strong></th>
<th><strong>Annual Growth Rate:</strong></th>
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<tbody>
<tr>
<td>33,790</td>
<td>4,340</td>
<td>0.64%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Account Manager
- Account Representative
- Call Center Representative
- Client Services Representative
- Customer Care Representative (CCR)
- Customer Service Agent
- Customer Service Representative (Customer Service Rep)
- Customer Service Specialist
- Member Services Representative
- Sales Facilitator

### Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.
51-9032  Cutting and Slicing Machine Setters, Operators, and Tenders

Set up, operate, or tend machines that cut or slice materials, such as glass, stone, cork, rubber, tobacco, food, paper, or insulating material.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Press buttons, pull levers, or depress pedals to start and operate cutting and slicing machines. Feed stock into cutting machines, onto conveyors, or under cutting blades, by threading, guiding, pushing, or turning handwheels. Remove completed materials or products from cutting or slicing machines, and stack or store them for additional processing. Turn cranks or press buttons to activate winches that move cars under sawing cables or saw frames. Examine, measure, and weigh materials or products to verify conformance to specifications, using measuring devices, such as rulers, micrometers, or scales. Move stock or scrap to and from machines manually, or by using carts, handtrucks, or lift trucks. Set up, operate, or tend machines that cut or slice materials, such as glass, stone, cork, rubber, tobacco, food, paper, or insulating material. Direct workers on cutting teams. Clean and lubricate cutting machines, conveyors, blades, saws, or knives, using steam hoses, scrapers, brushes, or oil cans. Remove defective or substandard materials from machines, and readjust machine components so that products meet standards. Monitor operation of cutting or slicing machines to detect malfunctions or to determine whether supplies need replenishment. Review work orders, blueprints, specifications, or job samples to determine components, settings, and adjustments for cutting and slicing machines. Maintain production records, such as quantities, types, and dimensions of materials produced. Mark cutting lines or identifying information on stock, using marking pencils, rulers, or scribes. Change or replace saw blades, cables, cutter heads, and grinding wheels, using hand tools. Position width gauge blocks between blades, and level blades and insert wedges into frames to secure blades to frames. Cut stock manually to prepare for machine cutting, using tools such as knives, cleavers, handsaws, or hammers and chisels. Start pumps to circulate water and abrasives onto blades or cables during cutting. Adjust machine controls to alter position, alignment, speed, or pressure. Stack and sort cut material for packaging, further processing, or shipping, according to types and sizes of material. Position stock along cutting lines, or against stops on beds of scoring or cutting machines. Start machines to verify setups, and make any necessary adjustments. Operate cranes, or signal crane operators to position or remove stone from cars or saw beds. Sharpen cutting blades, knives, or saws, using files, bench grinders, or honing stones. Type instructions on computer keyboards, push buttons to activate computer programs, or manually set cutting guides, clamps, and knives. Select and install machine components, such as cutting blades, rollers, and templates, according to specifications, using hand tools. Tighten pulleys or add abrasives to maintain cutting speeds. Wash stones, using water hoses.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$11.68</td>
<td>$24,290</td>
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<tr>
<td><strong>Average</strong></td>
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<tr>
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<tr>
<td>$18.28</td>
<td>$38,030</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cutter
Cutter Operator
Cutting Pressman
Die Cutter Operator
Flat Cutter
Machine Operator
Paper Cutter
Sheeter
Skiver Operator
Slitter

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**15-1141 Database Administrators**

Administer, test, and implement computer databases, applying knowledge of database management systems. Coordinate changes to computer databases. May plan, coordinate, and implement security measures to safeguard computer databases.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Specify users and user access levels for each segment of database. Test programs or databases, correct errors, and make necessary modifications. Select and enter codes to monitor database performance and to create production database. Review procedures in database management system manuals for making changes to database. Train users and answer questions. Write and code logical and physical database descriptions and specify identifiers of database to management system or direct others in coding descriptions. Review workflow charts developed by programmer analyst to understand tasks computer will perform, such as updating records. Establish and calculate optimum values for database parameters, using manuals and calculator. Modify existing databases and database management systems or direct programmers and analysts to make changes. Plan, coordinate and implement security measures to safeguard information in computer files against accidental or unauthorized damage, modification or disclosure. Develop methods for integrating different products so they work properly together such as customizing commercial databases to fit specific needs. Develop standards and guidelines to guide the use and acquisition of software and to protect vulnerable information. Develop data model describing data elements and how they are used, following procedures and using pen, template or computer software. Work as part of a project team to coordinate database development and determine project scope and limitations. Approve, schedule, plan, and supervise the installation and testing of new products and improvements to computer systems, such as the installation of new databases. Review project requests describing database user needs to estimate time and cost required to accomplish project. Identify and evaluate industry trends in database systems to serve as a source of information and advice for upper management. Revise company definition of data as defined in data dictionary.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$26.14</td>
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<tr>
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<td>$39.78</td>
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<tr>
<td>Experienced</td>
<td>$46.60</td>
</tr>
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</table>

Average Total Openings: 135

Annual Growth Rate: 0.96%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Data Architect
- Database Administration Manager
- Database Administrator (DBA)
- Database Analyst
- Database Coordinator
- Database Developer
- Database Programmer
- Information Systems Manager
- Management Information Systems Director (MIS Director)
- System Administrator

### Post-Secondary Institutions with Programs
- Alabama A & M University
- Athens State University
- Auburn University
- Jacksonville State University
- Talladega College
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of Mobile
- University of North Alabama
- University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
41-9011 Demonstrators and Product Promoters
Demonstrate merchandise and answer questions for the purpose of creating public interest in buying the product. May sell demonstrated merchandise.

Education: These occupations typically require a high school diploma.
OJT: None
Tasks: Research or investigate products to be presented to prepare for demonstrations. Set up and arrange displays or demonstration areas to attract the attention of prospective customers. Instruct customers in alteration of products. Record and report demonstration-related information, such as the number of questions asked by the audience or the number of coupons distributed. Suggest specific product purchases to meet customers’ needs. Transport, assemble, and disassemble materials used in presentations. Sell products being promoted and keep records of sales. Keep areas neat while working and return items to correct locations following demonstrations. Demonstrate or explain products, methods, or services to persuade customers to purchase products or use services. Visit trade shows, stores, community organizations, or other venues to demonstrate products or services or to answer questions from potential customers. Provide product samples, coupons, informational brochures, or other incentives to persuade people to buy products. Wear costumes or sign boards and walk in public to promote merchandise, services, or events. Stock shelves with products. Provide product information, using lectures, films, charts, or slide shows. Recommend product or service improvements to employers. Develop lists of prospective clients from sources such as newspaper items, company records, local merchants, or customers. Practice demonstrations to ensure that they will run smoothly. Learn about competitors’ products or consumers’ interests or concerns to answer questions or provide more complete information. Identify interested and qualified customers to provide them with additional information. Work as part of a team of demonstrators to accommodate large crowds. Write articles or pamphlets about products. Contact businesses or civic establishments to arrange to exhibit and sell merchandise. Train demonstrators to present a company’s products or services.

License: License Not Required.
Outlook: Good

Alabama Employment Outlook

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<tr>
<th></th>
<th>Alabama Wage Data</th>
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<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$10.26 Entry</td>
<td>$21,350</td>
<td>130</td>
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<tr>
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<td>$12.12 Average</td>
<td>$25,200</td>
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<td>Experienced</td>
<td>$13.04 Experienced</td>
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<td></td>
<td></td>
<td></td>
<td>1.44%</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Brand Ambassador
Demo Specialist
Demonstrator
Event Specialist
Field Merchandiser
Food Demonstrator
In Store Demonstrator
Merchandiser
Product Ambassador
Product Demonstrator

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
31-9091 Dental Assistants

Assist dentist, set up equipment, prepare patient for treatment, and keep records.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Prepare patient, sterilize or disinfect instruments, set up instrument trays, prepare materials, or assist dentist during dental procedures. Record treatment information in patient records. Expose dental diagnostic x-rays. Take and record medical and dental histories and vital signs of patients. Clean teeth, using dental instruments. Make preliminary impressions for study casts and occlusal registrations for mounting study casts. Provide postoperative instructions prescribed by dentist. Instruct patients in oral hygiene and plaque control programs. Pour, trim, and polish study casts. Clean and polish removable appliances. Fabricate temporary restorations or custom impressions from preliminary impressions. Order and monitor dental supplies and equipment inventory. Assist dentist in management of medical or dental emergencies. Apply protective coating of fluoride to teeth. Schedule appointments, prepare bills and receive payment for dental services, complete insurance forms, and maintain records, manually or using computer. Fabricate and fit orthodontic appliances and materials for patients, such as retainers, wires, or bands.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<th></th>
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<th>Alabama Projections</th>
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<td><strong>Annual Wage</strong></td>
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<td>$12.02</td>
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<tr>
<td>Average</td>
<td>$16.10</td>
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<tr>
<td>Experienced</td>
<td>$18.14</td>
<td>Experienced $37,740</td>
</tr>
</tbody>
</table>

|                    | **Annual Growth Rate:** 1.64% |
| Entry | $25,000 |
| Average | $33,490 |
| Experienced | $37,740 |

**2026 Projected Employment:** 4,140

**Average Total Openings:** 475

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Certified Dental Assistant (CDA)
- Certified Registered Dental Assistant
- Dental Assistant (DA)
- Expanded Duty Dental Assistant (EDDA)
- Expanded Function Dental Assistant
- Oral Surgery Assistant
- Orthodontic Assistant (Ortho Assistant)
- Orthodontic Technician
- Registered Dental Assistant (RDA)
- Surgical Dental Assistant

**Post-Secondary Institutions with Programs**
- Brown Mackie College-Birmingham
- Fortis College
- Fortis College-Montgomery
- Fortis Institute-Birmingham
- George C Wallace State Community College-Hanceville
- H Council Trenholm State Community College
- James H Faulkner State Community College
- John C Calhoun State Community College
- Lawson State Community College-Birmingham Campus
- Ross Medical Education Center-Huntsville
- University of Alabama at Birmingham

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-2021 Dental Hygienists

Clean teeth and examine oral areas, head, and neck for signs of oral disease. May educate patients on oral hygiene, take and develop x rays, or apply fluoride or sealants.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** None

**Tasks:** Clean calcareous deposits, accretions, and stains from teeth and beneath margins of gums, using dental instruments. Record and review patient medical histories. Feel and visually examine gums for sores and signs of disease. Chart conditions of decay and disease for diagnosis and treatment by dentist. Examine gums, using probes, to locate periodontal recessed gums and signs of gum disease. Provide clinical services or health education to improve and maintain the oral health of patients or the general public. Feel lymph nodes under patient's chin to detect swelling or tenderness that could indicate presence of oral cancer. Expose and develop x-ray film. Maintain dental equipment and sharpen and sterilize dental instruments. Apply fluorides or other cavity preventing agents to arrest dental decay. Administer local anesthetic agents. Maintain patient recall system. Remove excess cement from coronal surfaces of teeth. Place and remove rubber dams, matrices, and temporary restorations. Make impressions for study casts. Conduct dental health clinics for community groups to augment services of dentist. Remove sutures and dressings.

**License:** In-State License by Regional Exam Fee: $225.00 Renewal Fee: $65.00 Licensure by Credentials (Out-of-State): $225.00

**Outlook:** Good

### Alabama Employment Outlook

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<td>$38,420</td>
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<td>$46,290</td>
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<td>$50,220</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Dental Hygienist
- Dental Hygienist, Mobile Coordinator
- Education Coordinator
- Hygienist
- Implant Coordinator
- Pediatric Dental Hygienist
- Registered Dental Hygienist (RDH)
- Registered Dental Hygienist, Part Time Clinical Faculty

**Post-Secondary Institutions with Programs**

- Fortis Institute-Birmingham
- George C Wallace State Community College-Hanceville
Dental Laboratory Technicians

Construct and repair full or partial dentures or dental appliances.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Read prescriptions or specifications and examine models or impressions to determine the design of dental products to be constructed. Test appliances for conformance to specifications and accuracy of occlusion, using articulators and micrometers. Apply porcelain paste or wax over prosthesis frameworks or setups, using brushes and spatulas. Fabricate, alter, or repair dental devices, such as dentures, crowns, bridges, inlays, or appliances for straightening teeth. Build and shape wax teeth, using small hand instruments and information from observations or dentists’ specifications. Place tooth models on apparatus that mimics bite and movement of patient's jaw to evaluate functionality of model. Remove excess metal or porcelain and polish surfaces of prostheses or frameworks, using polishing machines. Prepare metal surfaces for bonding with porcelain to create artificial teeth, using small hand tools. Load newly constructed teeth into porcelain furnaces to bake the porcelain onto the metal framework. Rebuild or replace linings, wire sections, or missing teeth to repair dentures. Create a model of patient's mouth by pouring plaster into a dental impression and allowing plaster to set. Melt metals or mix plaster, porcelain, or acrylic pastes and pour materials into molds or over frameworks to form dental prostheses or apparatus. Shape and solder wire and metal frames or bands for dental products, using soldering irons and hand tools. Mold wax over denture setups to form the full contours of artificial gums. Fill chipped or low spots in surfaces of devices, using acrylic resins. Prepare wax bite blocks and impression trays for use. Train or supervise other dental technicians or dental laboratory bench workers.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tr>
<td>Experienced</td>
<td>$21.51</td>
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<td>$24,630</td>
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<td>$44,740</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Crown and Bridge Dental Lab Technician
- Dental Ceramist
- Dental Laboratory Technician (Dental Lab Technician)
- Dental Technician (Dental Tech)
- Denture Technician
- Metal Finisher
- Model and Dye Person
- Orthodontic Laboratory Technician (Orthodontic Lab Technician)
- Porcelain Technician
- Waxer

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Dentists, General

Examine, diagnose, and treat diseases, injuries, and malformations of teeth and gums. May treat diseases of nerve, pulp, and other dental tissues affecting oral hygiene and retention of teeth. May fit dental appliances or provide preventive care.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: None

Tasks: Use masks, gloves, and safety glasses to protect patients and self from infectious diseases. Examine teeth, gums, and related tissues, using dental instruments, x-rays, or other diagnostic equipment, to evaluate dental health, diagnose diseases or abnormalities, and plan appropriate treatments. Use dental air turbines, hand instruments, dental appliances, or surgical implements. Administer anesthetics to limit the amount of pain experienced by patients during procedures. Diagnose and treat diseases, injuries, or malformations of teeth, gums, or related oral structures and provide preventive or corrective services. Treat exposure of pulp by pulp capping, removal of pulp from pulp chamber, or root canal, using dental instruments. Fill pulp chamber and canal with endodontic materials. Formulate plan of treatment for patient's teeth and mouth tissue. Analyze or evaluate dental needs to determine changes or trends in patterns of dental disease. Advise or instruct patients regarding preventive dental care, the causes and treatment of dental problems, or oral health care services. Perform oral or periodontal surgery on the jaw or mouth. Manage business aspects such as employing or supervising staff or handling paperwork or insurance claims. Design, make, or fit prosthodontic appliances, such as space maintainers, bridges, or dentures, or write fabrication instructions or prescriptions for denturists or dental technicians. Write prescriptions for antibiotics or other medications. Apply fluoride or sealants to teeth. Plan, organize, or maintain dental health programs. Remove diseased tissue, using surgical instruments. Eliminate irritating margins of fillings and correct occlusions, using dental instruments. Bleach, clean, or polish teeth to restore natural color. Produce or evaluate dental health educational materials.

License: In-State License by Regional Exam Fee: $325.00 Licensure by Credentials (Out-of-State): $2000.00 Controlled Substance Fee: $135 General Sedation Renewal Fee: $200.00

Outlook: Good

Alabama Wage Data

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<td>$87.13</td>
<td>$181,240</td>
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<td>$113.59</td>
<td>$236,270</td>
<td>Annual Growth Rate:</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Associate Dentist
Dental Surgery Doctor (DDS)
Dentist
Dentist/Owner
Doctor of Dental Medicine (DMD)
Doctor of Dental Surgery (DDS)
Family Dentist
General Dentist
General Dentist/Owner
Pediatric Dentist

Post-Secondary Institutions with Programs

University of Alabama at Birmingham

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-2032 Diagnostic Medical Sonographers
Produce ultrasonic recordings of internal organs for use by physicians.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate’s degree.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Select appropriate equipment settings and adjust patient positions to obtain the best sites and angles. Observe screen during scan to ensure that image produced is satisfactory for diagnostic purposes, making adjustments to equipment as required. Observe and care for patients throughout examinations to ensure their safety and comfort. Decide which images to include, looking for differences between healthy and pathological areas. Operate ultrasound equipment to produce and record images of the motion, shape, and composition of blood, organs, tissues, or bodily masses, such as fluid accumulations. Record and store suitable images, using camera unit connected to the ultrasound equipment. Provide sonogram and oral or written summary of technical findings to physician for use in medical diagnosis. Prepare patient for exam by explaining procedure, transferring patient to ultrasound table, scrubbing skin and applying gel, and positioning patient properly. Obtain and record accurate patient history, including prior test results or information from physical examinations. Process and code film from procedures and complete appropriate documentation. Determine whether scope of exam should be extended, based on findings. Maintain records that include patient information, sonographs and interpretations, files of correspondence, publications and regulations, or quality assurance records, such as pathology, biopsy, or post-operative reports. Maintain stock and supplies, preparing supplies for special examinations and ordering supplies when necessary. Perform clerical duties, such as scheduling exams or special procedures, keeping records, or archiving computerized images. Clean, check, and maintain sonographic equipment, submitting maintenance requests or performing minor repairs as necessary. Coordinate work with physicians or other healthcare team members, including providing assistance during invasive procedures. Load and unload film cassettes used to record images from procedures. Perform medical procedures, such as administering oxygen, inserting and removing airways, taking vital signs, or giving emergency treatment, such as first aid or cardiopulmonary resuscitation (CPR). Supervise or train students or other medical sonographers. Perform legal and ethical duties, including preparing safety or accident reports, obtaining written consent from patient to perform invasive procedures, or reporting symptoms of abuse or neglect.

License: License Not Required.

Outlook: Good

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<th>Alabama Projections</th>
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<td>$41,070</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cardiac Sonographer
Cardiac/Vascular Sonographer
Diagnostic Medical Sonographer
Medical Sonographer
Registered Diagnostic Medical Sonographer (RDMS)
Sonographer
Staff Sonographer
Ultrasonographer
Ultrasound Technician (Ultrasound Tech)
Ultrasound Technologist (Ultrasound Tech)

Post-Secondary Institutions with Programs
Cardiac and Vascular Institute of Ultrasound
George C Wallace State Community College-Hanceville
H Councill Trenholm State Community College
Lurleen B Wallace Community College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Dietitians and Nutritionists

Plan and conduct food service or nutritional programs to assist in the promotion of health and control of disease. May supervise activities of a department providing quantity food services, counsel individuals, or conduct nutritional research.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Monitor food service operations to ensure conformance to nutritional, safety, sanitation and quality standards. Inspect meals served for conformance to prescribed diets and standards of palatability and appearance. Purchase food in accordance with health and safety codes. Assess nutritional needs, diet restrictions and current health plans to develop and implement dietary-care plans and provide nutritional counseling. Manage quantity food service departments or clinical and community nutrition services. Consult with physicians and health care personnel to determine nutritional needs and diet restrictions of patient or client. Coordinate diet counseling services. Advise patients and their families on nutritional principles, dietary plans, diet modifications, and food selection and preparation. Counsel individuals and groups on basic rules of good nutrition, healthy eating habits, and nutrition monitoring to improve their quality of life. Select, train, and supervise workers who plan, prepare, and serve meals. Advise food service managers and organizations on sanitation, safety procedures, menu development, budgeting, and planning to assist with establishment, operation, and evaluation of food service facilities and nutrition programs. Plan and conduct training programs in dietetics, nutrition, and institutional management and administration for medical students, health-care personnel, and the general public. Plan, conduct, and evaluate dietary, nutritional, and epidemiological research. Organize, develop, analyze, test, and prepare special meals, such as low-fat, low-cholesterol, or chemical-free meals. Write research reports and other publications to document and communicate research findings. Test new food products and equipment. Develop curriculum and prepare manuals, visual aids, course outlines, and other materials used in teaching. Develop policies for food service or nutritional programs to assist in health promotion and disease control. Make recommendations regarding public policy, such as nutrition labeling, food fortification, or nutrition standards for school programs. Prepare and administer budgets for food, equipment, and supplies. Coordinate recipe development and standardization and develop new menus for independent food service operations. Plan and prepare grant proposals to request program funding. Confer with design, building, and equipment personnel to plan for construction and remodeling of food service units.

License: Regular License Fees: $100.00 Application Fee $100.00 Application Fee Temporary License Fees: $150.00 License Fee $75.00 License Fee

Outlook: Good

Alabama Wage Data

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<td>$30.04</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Clinical Dietician
Clinical Dietitian
Correctional Food Service Supervisor
Dietary Manager
Dietitian
Nutritionist
Outpatient Dietitian
Pediatric Clinical Dietician
Registered Dietician
Registered Dietitian

Post-Secondary Institutions with Programs

Auburn University
Oakwood University
Samford University
The University of Alabama
Tuskegee University
University of Alabama at Birmingham
Directors, Religious Activities and Education

Plan, direct, or coordinate programs designed to promote the religious education or activities of a denominational group. May provide counseling and guidance relative to marital, health, financial, and religious problems.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: None

Tasks: Publicize programs through sources such as newsletters, bulletins, or mailings. Develop or direct study courses or religious education programs within congregations. Counsel individuals regarding interpersonal, health, financial, or religious problems. Locate and distribute resources, such as periodicals or curricula, to enhance the effectiveness of educational programs. Implement program plans by ordering needed materials, scheduling speakers, reserving space, or handling other administrative details. Identify and recruit potential volunteer workers. Confer with clergy members, congregational officials, or congregational organizations to encourage support of or participation in religious education activities. Collaborate with other ministry members to establish goals and objectives for religious education programs or to develop ways to encourage program participation. Train and supervise religious education instructional staff. Schedule special events such as camps, conferences, meetings, seminars, or retreats. Visit congregational members' homes or arrange for pastoral visits to provide information or resources regarding religious education programs. Analyze member participation or changes in congregational emphasis to determine needs for religious education. Select appropriate curricula or class structures for educational programs. Analyze revenue and program cost data to determine budget priorities. Participate in denominational activities aimed at goals such as promoting interfaith understanding or providing aid to new or small congregations. Plan fundraising activities for the church. Interpret religious education activities to the public through speaking, leading discussions, or writing articles for local or national publications. Attend workshops, seminars, or conferences to obtain program ideas, information, or resources. Plan or conduct conferences dealing with the interpretation of religious ideas or convictions.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<td>Entry</td>
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<td>$40.13</td>
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<td>Experienced</td>
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<tr>
<td>$50.59</td>
<td>$105,220</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Adult Ministries Director
- Children's Ministries Director
- Christian Education Director
- Religious Education Coordinator
- Religious Education Director
- Senior Adults Director
- Student Ministries Director
- Women's Ministry Director
- Youth Director
- Youth Ministry Director

Post-Secondary Institutions with Programs
- Amridge University
- Faulkner University
- Heritage Christian University
- Huntingdon College
- Huntsville Bible College
- Oakwood University
- Southeastern Bible College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Education, Guidance, School, and Vocational Counselors
Counsel individuals and provide group educational and vocational guidance services.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Maintain accurate and complete student records as required by laws, district policies, and administrative regulations. Provide crisis intervention to students when difficult situations occur at schools. Counsel individuals to help them understand and overcome personal, social, or behavioral problems affecting their educational or vocational situations. Establish and enforce administration policies and rules governing student behavior. Conduct follow-up interviews with counselees to determine if their needs have been met. Counsel students regarding educational issues, such as course and program selection, class scheduling and registration, school adjustment, truancy, study habits, and career planning. Prepare students for later educational experiences by encouraging them to explore learning opportunities and to persevere with challenging tasks. Provide students with information on topics, such as college degree programs and admission requirements, financial aid opportunities, trade and technical schools, and apprenticeship programs. Confer with parents or guardians, teachers, administrators, and other professionals to discuss children's progress, resolve behavioral, academic, and other problems, and to determine priorities for students and their resource needs. Assess needs for assistance, such as rehabilitation, financial aid, or additional vocational training, and refer clients to the appropriate services. Observe students during classroom and play activities to evaluate students' performance, behavior, social development, and physical health. Review transcripts to ensure that students meet graduation or college entrance requirements and write letters of recommendation. Sponsor extracurricular activities, such as clubs, student organizations, and academic contests. Refer students to degree programs based on interests, aptitudes, or educational assessments. Establish and supervise peer counseling and peer tutoring programs. Attend meetings, educational conferences, and training workshops and serve on committees. Supervise, train, and direct professional staff and interns. Provide disabled students with assistive devices, supportive technology, and assistance accessing facilities, such as restrooms. Prepare reports on students and activities as required by administration. Identify cases of domestic abuse or other family problems and encourage students or parents to seek additional assistance from mental health professionals.

**License:** Application Fee: $30.00  Renewal Fee: $30.00 Background Review Fee: $49.65 Out-of-State Background Review Fee: $57.65

**Outlook:** Good

### Alabama Employment Outlook

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<td>$18.16</td>
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<td>Experienced</td>
<td>$29.02</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Academic Advisor
- Academic Counselor
- Admissions Counselor
- Career Counselor
- College Counselor
- Guidance Counselor
- School Adjustment Counselor
- School Counselor
- Student Development Advisor
- Student Services Coordinator

**Post-Secondary Institutions with Programs**
- Alabama State University
- Auburn University
- Auburn University at Montgomery
- Jacksonville State University
- Samford University
- The University of Alabama
- Troy University
- University of Alabama at Birmingham
- University of Montevallo
- University of North Alabama
- University of South Alabama
- University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Electric Motor, Power Tool, and Related Repairers**

Repair, maintain, or install electric motors, wiring, or switches.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Seal joints with putty, mortar, and asbestos, using putty extruders and knives. Clean, rinse, and dry transformer cases, using boiling water, scrapers, solvents, hoses, and cloths. Clean cells, cell assemblies, glassware, leads, electrical connections, and battery poles, using scrapers, steam, water, emery cloths, power grinders, or acid. Maintain stocks of parts. Inspect batteries for structural defects such as dented cans, damaged carbon rods and terminals, and defective seals. Set machinery for proper performance, using computers. Record repairs required, parts used, and labor time. Verify and adjust alignments and dimensions of parts, using gauges and tracing lathes. Inspect and test equipment to locate damage or worn parts and diagnose malfunctions, or read work orders or schematic drawings to determine required repairs. Scrape and clean units or parts, using cleaning solvents and equipment such as buffing wheels. Lubricate moving parts. Reface, ream, and polish commutators and machine parts to specified tolerances, using machine tools. Lift units or parts such as motors or generators, using cranes or chain hoists, or signal crane operators to lift heavy parts or subassemblies. Bolt porcelain insulators to wood parts to assemble hot stools. Test equipment for overheating, using speed gauges and thermometers. Assemble electrical parts such as alternators, generators, starting devices, and switches, following schematic drawings and using hand, machine, and power tools. Add water or acid to battery cell solutions to obtain specified concentrations. Weld, braze, or solder electrical connections. Reassemble repaired electric motors to specified requirements and ratings, using hand tools and electrical meters. Rewind coils on cores in slots, or make replacement coils, using coil-winding machines. Disassemble defective equipment so that repairs can be made, using hand tools. Cut and form insulation, and insert insulation into armature, rotor, or stator slots. Steam-clean polishing and buffing wheels to remove abrasives and bonding materials, and spray, brush, or recoat surfaces as necessary. Read service guides to find information needed to perform repairs. Pour compounds into transformer-case terminal openings to seal out moisture. Test conditions, fluid levels, and specific gravities of electrolyte cells, using voltimeters, hydrometers, and thermometers. Adjust working parts, such as fan belts, contacts, and springs, using hand tools and gauges. Measure velocity, horsepower, revolutions per minute (rpm), amperage, circuitry, and voltage of units or parts to diagnose problems, using ammeters, voltmeters, wattmeters, and other testing devices. Hammer out dents and twists in tools and equipment.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<td>$25.28</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Electric Motor Mechanic
- Electric Motor Repairman
- Electric Motor Winder
- Electro Mechanic
- Maintenance Technician
- Power Tool Repair Technician
- Repair Technician
- Service Technician
- Tool Repair Technician
- Tool Technician

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
**17-3012 Electrical and Electronics Drafters**

Prepare wiring diagrams, circuit board assembly diagrams, and layout drawings used for the manufacture, installation, or repair of electrical equipment.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

**Tasks:** Consult with engineers to discuss or interpret design concepts, or determine requirements of detailed working drawings. Examine electronic schematics and supporting documents to develop, compute, and verify specifications for drafting data, such as configuration of parts, dimensions, or tolerances. Draft detail and assembly drawings of design components, circuitry or printed circuit boards, using computer-assisted equipment or standard drafting techniques and devices. Locate files relating to specified design project in database library, load program into computer, and record completed job data. Review work orders or procedural manuals and confer with vendors or design staff to resolve problems or modify design. Generate computer tapes of final layout design to produce layered photo masks or photo plotting design onto film. Key and program specified commands and engineering specifications into computer system to change functions and test final layout. Supervise and coordinate work activities of workers engaged in drafting, designing layouts, assembling, or testing printed circuit boards. Compare logic element configuration on display screen with engineering schematics and calculate figures to convert, redesign, or modify element. Review blueprints to determine customer requirements and consult with assembler regarding schematics, wiring procedures, or conductor paths. Select drill size to drill test head, according to test design and specifications, and submit guide layout to designated department. Plot electrical test points on layout sheets and draw schematics for wiring test fixture heads to frames. Copy drawings of printed circuit board fabrication using print machine or blueprinting procedure. Train students to use drafting machines and to prepare schematic diagrams, block diagrams, control drawings, logic diagrams, integrated circuit drawings, or interconnection diagrams.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<td>$31.42</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Computer Aided Design (CAD) Operator
- Electrical Designer
- Electrical Drafter
- Engineering Associate
- Associate Drafter

**Post-Secondary Institutions with Programs**

- Bevill State Community College
- Bishop State Community College
- Central Alabama Community College
- Gadsden State Community College
- George C Wallace Community College
- H Councill Trenholm State Technical College
- J F Drake State Community and Technical College
- J F Ingram State Technical College
- John C Calhoun State Community College
- Lawson State Community College - Birmingham
- Lurleen B Wallace Community College
- Northeast Alabama Community College
- Northwest-Shoals Community College - Muscle Shoals
- Remington College
- Shelton State Community College
- Southern Union State Community College
- Wallace State Community College - Hanceville

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Electrical and Electronics Engineering Technicians

Apply electrical and electronic theory and related knowledge, usually under the direction of engineering staff, to design, build, repair, calibrate, and modify electrical components, circuitry, controls, and machinery for subsequent evaluation and use by engineering staff in making engineering design decisions.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate’s degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Read blueprints, wiring diagrams, schematic drawings, or engineering instructions for assembling electronics units, applying knowledge of electronic theory and components. Identify and resolve equipment malfunctions, working with manufacturers or field representatives as necessary to procure replacement parts. Test electronics units, using standard test equipment, and analyze results to evaluate performance and determine need for adjustment. Adjust or replace defective or improperly functioning circuitry or electronics components, using hand tools or soldering iron. Assemble, test, or maintain circuitry or electronic components, according to engineering instructions, technical manuals, or knowledge of electronics, using hand or power tools. Perform preventative maintenance or calibration of equipment or systems. Maintain system logs or manuals to document testing or operation of equipment. Provide customer support and education, working with users to identify needs, determine sources of problems, or to provide information on product use. Write reports or record data on testing techniques, laboratory equipment, or specifications to assist engineers. Procure parts and maintain inventory and related documentation. Research equipment or component needs, sources, competitive prices, delivery times, or ongoing operational costs. Provide user applications or engineering support or recommendations for new or existing equipment with regard to installation, upgrades, or enhancements. Maintain working knowledge of state-of-the-art tools or software by reading or attending conferences, workshops, or other training. Design basic circuitry and draft sketches for clarification of details and design documentation under engineers’ direction, using drafting instruments or computer-aided design (CAD) equipment. Build prototypes from rough sketches or plans. Fabricate parts, such as coils, terminal boards, or chassis, using bench lathes, drills, or other machine tools. Develop or upgrade preventative maintenance procedures for components, equipment, parts, or systems. Write computer or microprocessor software programs. Survey satellite receival sites for proper signal level or provide technical assistance in dish location or installation, transporting dishes as necessary.

License: License Not Required.

Outlook: Satisfactory

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<td><strong>Hourly Wage</strong></td>
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<td>$62,280</td>
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<td>Experienced</td>
<td>$73,460</td>
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2016 Estimated Employment: 2,050
2026 Projected Employment: 2,230
Average Total Openings: 200
Annual Growth Rate: 0.85%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Electronics Engineering Technicians
- Radio Mechanics
- Geophysical Data Technicians
- Mechanical Drafters
- Environmental Engineering Technicians
- Camera and Photographic Equipment Repairers
- Elevator Installers and Repairers
- Medical and Clinical Laboratory Technologists
- Computer, Automated Teller, and Office Machine Repairers
- Electro-Mechanical Technicians

**Post-Secondary Institutions with Programs**
- Alabama A & M University
- Bishop State Community College
- Enterprise State Community College
- Gadsden State Community College
- Herzing University-Birmingham
- J F Drake State Community and Technical College
- Jacksonville State University
- James H Faulkner State Community College
- Lawson State Community College-Birmingham Campus
- Snead State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
17-2071 Electrical Engineers

Research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Design electrical systems or components that minimize electric energy requirements, such as lighting systems designed to account for natural lighting. Prepare technical drawings, specifications of electrical systems, or topographical maps to ensure that installation and operations conform to standards and customer requirements. Design, implement, maintain, or improve electrical instruments, equipment, facilities, components, products, or systems for commercial, industrial, or domestic purposes. Confer with engineers, customers, or others to discuss existing or potential engineering projects or products. Oversee project production efforts to assure projects are completed on time and within budget. Operate computer-assisted engineering or design software or equipment to perform engineering tasks. Compile data and write reports regarding existing or potential electrical engineering studies or projects. Plan layout of electric power generating plants or distribution lines or stations. Direct or coordinate manufacturing, construction, installation, maintenance, support, documentation, or testing activities to ensure compliance with specifications, codes, or customer requirements. Perform detailed calculations to compute and establish manufacturing, construction, or installation standards or specifications. Investigate customer or public complaints to determine the nature and extent of problems. Prepare specifications for purchases of materials or equipment. Inspect completed installations and observe operations to ensure conformance to design and equipment specifications and compliance with operational, safety, or environmental standards. Plan or implement research methodology or procedures to apply principles of electrical theory to engineering projects. Estimate labor, material, or construction costs for budget preparation purposes. Supervise or train project team members as necessary. Conduct field surveys or study maps, graphs, diagrams, or other data to identify and correct power system problems. Investigate or test vendors’ or competitors’ products. Assist in developing capital project programs for new equipment or major repairs. Develop systems that produce electricity using renewable energy sources, such as wind, solar, or biofuels. Collect data relating to commercial or residential development, population, or power system interconnection to determine operating efficiency of electrical systems. Integrate electrical systems with renewable energy systems to improve overall efficiency.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<td>Experienced</td>
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<td><strong>2026 Projected Employment:</strong> 5,100</td>
<td><strong>Average Total Openings:</strong> 360</td>
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<tr>
<td><strong>Annual Growth Rate:</strong> 1.28%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Circuits Engineer
Design Engineer
Electrical Controls Engineer
Electrical Design Engineer
Electrical Engineer
Electrical Project Engineer
Instrumentation and Electrical Reliability Engineer (I&E Reliability Engineer)
Power Systems Engineer
Project Engineer
Test Engineer

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Electrical Power-Line Installers and Repairers

Install or repair cables or wires used in electrical power or distribution systems. May erect poles and light or heavy duty transmission towers.

**Education:** These occupations typically require less than a high school diploma - or the equivalent.

**OJT:** Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

**Tasks:** Coordinate work assignment preparation and completion with other workers. Drive vehicles equipped with tools and materials to job sites. Splice or solder cables together or to overhead transmission lines, customer service lines, or street light lines, using hand tools, epoxies, or specialized equipment. Test conductors, according to electrical diagrams and specifications, to identify corresponding conductors and to prevent incorrect connections. Identify defective sectionalizing devices, circuit breakers, fuses, voltage regulators, transformers, switches, relays, or wiring, using wiring diagrams and electrical-testing instruments. Adhere to safety practices and procedures, such as checking equipment regularly and erecting barriers around work areas. Inspect and test power lines and auxiliary equipment to locate and identify problems, using reading and testing instruments. Dig holes, using augers, and set poles, using cranes and power equipment. Clean, tin, and splice corresponding conductors by twisting ends together or by joining ends with metal clamps and soldering connections. Install, maintain, and repair electrical distribution and transmission systems, including conduits, cables, wires, and related equipment, such as transformers, circuit breakers, and switches. Trim trees that could be hazardous to the functioning of cables or wires. Attach cross-arms, insulators, and auxiliary equipment to poles prior to installing them. Replace or straighten damaged poles. Install watt-hour meters and connect service drops between power lines and consumers' facilities. Travel in trucks, helicopters, and airplanes to inspect lines for freedom from obstruction and adequacy of insulation. String wire conductors and cables between poles, towers, trenches, pylons, and buildings, setting lines in place and using winches to adjust tension. Place insulating or fireproofing materials over conductors and joints. Climb poles or use truck-mounted buckets to access equipment. Open switches or attach grounding devices to remove electrical hazards from disturbed or fallen lines or to facilitate repairs. Cut and peel lead sheathing and insulation from defective or newly installed cables and conduits prior to splicing. Pull up cable by hand from large reels mounted on trucks. Cut trenches for laying underground cables, using trenchers and cable plows. Lay underground cable directly in trenches, or string it through conduit running through the trenches.

**License:** License Not Required.

**Outlook:** Good

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**Alabama Employment Outlook**

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<tr>
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<td>$22.59</td>
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<td>$31.37</td>
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<td>Experienced</td>
<td>$35.76</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
A Class Lineman
Apprentice Lineman Third Step
Class A Lineman
Electric Lineman
Electrical Lineman (Power)
Electrical Lineworker
Journeyman Lineman
Lineman
Lineworker
Power Lineman

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-2111 Electricians
Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Repair or replace wiring, equipment, or fixtures, using hand tools or power tools. Use a variety of tools or equipment, such as power construction equipment, measuring devices, power tools, and testing equipment, such as oscilloscopes, ammeters, or test lamps. Place conduit, pipes, or tubing, inside designated partitions, walls, or other concealed areas, and pull insulated wires or cables through the conduit to complete circuits between boxes. Assemble, install, test, or maintain electrical or electronic wiring, equipment, appliances, apparatus, or fixtures, using hand tools or power tools. Connect wires to circuit breakers, transformers, or other components. Plan layout and installation of electrical wiring, equipment, or fixtures, based on job specifications and local codes. Test electrical systems or continuity of circuits in electrical wiring, equipment, or fixtures, using testing devices, such as ohmmeters, voltmeters, or oscilloscopes, to ensure compatibility and safety of system. Inspect electrical systems, equipment, or components to identify hazards, defects, or the need for adjustment or repair, and to ensure compliance with codes. Perform business management duties, such as maintaining records or files, preparing reports, or ordering supplies or equipment. Diagnose malfunctioning systems, apparatus, or components, using test equipment and hand tools to locate the cause of a breakdown and correct the problem. Prepare sketches or follow blueprints to determine the location of wiring or equipment and to ensure conformance to building and safety codes. Construct or fabricate parts, using hand tools, according to specifications. Install ground leads and connect power cables to equipment, such as motors. Fasten small metal or plastic boxes to walls to house electrical switches or outlets. Work from ladders, scaffolds, or roofs to install, maintain, or repair electrical wiring, equipment, or fixtures. Perform physically demanding tasks, such as digging trenches to lay conduit or moving or lifting heavy objects. Direct or train workers to install, maintain, or repair electrical wiring, equipment, or fixtures. Provide preliminary sketches or cost estimates for materials or services. Advise management on whether continued operation of equipment could be hazardous. Maintain current electrician's license or identification card to meet governmental regulations. Provide assistance during emergencies by operating floodlights or generators, placing flares, or driving needed vehicles.

License: This applicant should contact the Department of Labor for fees

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$15.70</td>
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<tr>
<td>Average</td>
<td>$22.40</td>
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<tr>
<td>Experienced</td>
<td>$25.74</td>
</tr>
</tbody>
</table>

2016 Estimated Employment: 9,790
2026 Projected Employment: 10,430
Average Total Openings: 1,170
Annual Growth Rate: 0.64%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Chief Electrician
Control Electrician
Electrician
Industrial Electrician
Inside Wireman
Journeyman Electrician
Journeyman Wireman
Maintenance Electrician
Mechanical Trades Specialist, Electrician
Qualified Craft Worker, Electrician (QCW, Electrician)

Post-Secondary Institutions with Programs
Bevill State Community College
Bishop State Community College
Fortis College-Montgomery
Fortis Institute-Birmingham
Gadsden State Community College
George C Wallace Community College-Dothan
George C Wallace State Community College-Selma
H Councill Trenholm State Community College
J F Drake State Community and Technical College
J F Ingram State Technical College
John C Calhoun State Community College
Lawson State Community College-Birmingham Campus
Northwest-Shoals Community College
Shelton State Community College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Electronics Engineers, Except Computer

Research, design, develop, or test electronic components and systems for commercial, industrial, military, or scientific use employing knowledge of electronic theory and materials properties. Design electronic circuits and components for use in fields such as telecommunications, aerospace guidance and propulsion control, acoustics, or instruments and controls.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Design electronic components, software, products, or systems for commercial, industrial, medical, military, or scientific applications. Analyze electronics system requirements, capacity, cost, or customer needs to determine project feasibility. Plan or develop applications or modifications for electronic properties used in components, products, or systems to improve technical performance. Research or develop electronics technologies for use in electric-drive vehicles. Recommend repair or design modifications of electronics components or systems, based on factors such as environment, service, cost, or system capabilities. Develop or perform operational, maintenance, or testing procedures for electronic products, components, equipment, or systems. Confer with engineers, customers, vendors, or others to discuss existing or potential electronics engineering projects or products. Operate computer-assisted engineering or design software or equipment to perform electronics engineering tasks. Determine project material or equipment needs. Provide technical support or instruction to staff or customers regarding electronics equipment standards. Prepare, review, or maintain maintenance schedules, design documentation, or operational reports or charts. Evaluate project work to ensure effectiveness, technical adequacy, or compatibility in the resolution of complex electronics engineering problems. Inspect electronic equipment, instruments, products, or systems to ensure conformance to specifications, safety standards, or applicable codes or regulations. Prepare engineering sketches or specifications for construction, relocation, or installation of equipment, facilities, products, or systems. Represent employer at conferences, meetings, boards, panels, committees, or working groups to present, explain, or defend findings or recommendations, negotiate compromises or agreements, or exchange information. Prepare necessary criteria, procedures, reports, or plans for successful conduct of the project with consideration given to site preparation, facility validation, installation, quality assurance, or testing. Prepare documentation containing information such as confidential descriptions or specifications of proprietary hardware or software, product development or introduction schedules, product costs, or information about product performance weaknesses. Research or develop new green electronics technologies, such as lighting, optical data storage devices, or energy efficient televisions. Direct or coordinate activities concerned with manufacture, construction, installation, maintenance, operation, or modification of electronic equipment, products, or systems. Prepare budget or cost estimates for equipment, construction, or installation projects or control expenditures.

License: License Not Required.

Outlook: Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>$34.44</td>
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<td>Average</td>
<td>$52.04</td>
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<tr>
<td>Experienced</td>
<td>$60.83</td>
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<table>
<thead>
<tr>
<th><strong>Average Total Openings:</strong></th>
<th><strong>Annual Growth Rate:</strong></th>
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<tbody>
<tr>
<td>170</td>
<td>0.97%</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

#### Related Occupations
- Design Engineer
- Electronics Design Engineer
- Engineering Manager
- Evaluation Engineer
- Integrated Circuit Design Engineer (IC Design Engineer)
- Product Engineer
- Radio Frequency Engineer (RF Engineer)
- Research and Development Engineer (R&D Engineer)
- Test Engineer
- Test Engineering Manager

#### Post-Secondary Institutions with Programs
- Alabama A & M University
- Auburn University
- The University of Alabama
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Emergency Medical Technicians and Paramedics
Assess injuries, administer emergency medical care, and extricate trapped individuals. Transport injured or sick persons to medical facilities.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Observe, record, and report to physician the patient's condition or injury, the treatment provided, and reactions to drugs or treatment. Immobilize patient for placement on stretcher and ambulance transport, using backboard or other spinal immobilization device. Administer first aid treatment or life support care to sick or injured persons in prehospital settings. Administer drugs, orally or by injection, or perform intravenous procedures under a physician's direction. Comfort and reassure patients. Assess nature and extent of illness or injury to establish and prioritize medical procedures. Operate equipment, such as electrocardiograms (EKGs), external defibrillators, or bag valve mask resuscitators, in advanced life support environments. Coordinate work with other emergency medical team members or police or fire department personnel. Maintain vehicles and medical and communication equipment and replenish first aid equipment and supplies. Perform emergency diagnostic and treatment procedures, such as stomach suction, airway management, or heart monitoring, during ambulance ride. Communicate with dispatchers or treatment center personnel to provide information about situation, to arrange reception of victims, or to receive instructions for further treatment. Coordinate with treatment center personnel to obtain patients' vital statistics and medical history, to determine the circumstances of the emergency, and to administer emergency treatment. Drive mobile intensive care unit to specified location, following instructions from emergency medical dispatcher. Decontaminate ambulance interior following treatment of patient with infectious disease and report case to proper authorities. Attend training classes to maintain certification licensure, keep abreast of new developments in the field, or maintain existing knowledge.

License: License Fee: $12.00 Renewal Fee: $12.00

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$10.21</td>
<td>$21,240</td>
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<tr>
<td>Average</td>
<td>$14.29</td>
<td>$29,720</td>
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<tr>
<td>Experienced</td>
<td>$16.33</td>
<td>$33,960</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Emergency Medical Technician (EMT)
Emergency Medical Technician, Basic (EMT, B)
Emergency Medical Technician/Driver (EMT/DRIVER)
EMT Intermediate (Emergency Medical Technician, Intermediate)
EMT, Paramedic (Emergency Medical Technician, Paramedic)
EMT/Dispatcher (Emergency Medical Technician/Dispatcher)
First Responder
Flight Paramedic
Multi Care Technician (Multi Care Tech)
Paramedic

Post-Secondary Institutions with Programs
Bevill State Community College
Bishop State Community College
Chattahoochee Valley Community College
Columbia Southern University
Enterprise State Community College
Gadsden State Community College
George C Wallace Community College-Dothan
George C Wallace State Community College-Hanceville
H Councill Trenholm State Community College
Herzing University-Birmingham
James H Faulkner State Community College
Jefferson State Community College
John C Calhoun State Community College
Lawson State Community College-Birmingham Campus
Lurleen B Wallace Community College
Northeast Alabama Community College
Northwest-Shoals Community College
Reid State Technical College
Southern Union State Community College
University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Engine and Other Machine Assemblers
Construct, assemble, or rebuild machines, such as engines, turbines, and similar equipment used in such industries as construction, extraction, textiles, and paper manufacturing.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Fasten or install piping, fixtures, or wiring and electrical components to form assemblies or subassemblies, using hand tools, rivet guns, or welding equipment. Remove rough spots and smooth surfaces to fit, trim, or clean parts, using hand tools or power tools. Position or align components for assembly, manually or using hoists. Set and verify parts clearances. Read and interpret assembly blueprints or specifications manuals and plan assembly or building operations. Rework, repair, or replace damaged parts or assemblies. Lay out and drill, ream, tap, or cut parts for assembly. Set up and operate metalworking machines, such as milling or grinding machines, to shape or fabricate parts. Inspect, operate, and test completed products to verify functioning, machine capabilities, or conformance to customer specifications. Maintain and lubricate parts or components. Verify conformance of parts to stock lists or blueprints, using measuring instruments, such as calipers, gauges, or micrometers. Assemble systems of gears by aligning and meshing gears in gearboxes.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$15.34</td>
<td>$31,900</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$22.53</td>
<td>$46,870</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$26.13</td>
<td>$54,360</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Assembler
Assembly Line Worker
Cell Technician
Engine Assembler
Engine Builder
Field Service Technician
Fitter
Large Engine Assembler
Machine Assembler
Mechanical Assembler

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Environmental Engineering Technicians

Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental problems, including waste treatment and site remediation, under the direction of engineering staff or scientist. May assist in the development of environmental remediation devices.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Perform environmental quality work in field or office settings. Maintain project logbook records or computer program files. Improve chemical processes to reduce toxic emissions. Review work plans to schedule activities. Maintain process parameters and evaluate process anomalies. Prepare and package environmental samples for shipping or testing. Oversee support staff. Decontaminate or test field equipment used to clean or test pollutants from soil, air, or water. Receive, set up, test, or decontaminate equipment. Evaluate and select technologies to clean up polluted sites, restore polluted air, water, or soil, or rehabilitate degraded ecosystems. Collect and analyze pollution samples, such as air or ground water. Prepare statistical analysis and correction of air or water pollution data submitted by industry or other agencies. Work with customers to assess the environmental impact of proposed construction or to develop pollution prevention programs. Review technical documents to ensure completeness and conformance to requirements. Record laboratory or field data, including numerical data, test results, photographs, or summaries of visual observations. Develop work plans, including writing specifications or establishing material, manpower, or facilities needs. Inspect facilities to monitor compliance with regulations governing substances such as asbestos, lead, or wastewater. Assist in the cleanup of hazardous material spills. Arrange for the disposal of lead, asbestos, or other hazardous materials. Model biological, chemical, or physical treatment processes to remove or degrade pollutants. Assess the ability of environments to naturally remove or reduce conventional or emerging contaminants from air, water, or soil. Obtain product information, identify vendors or suppliers, or order materials or equipment to maintain inventory. Provide technical engineering support in the planning of projects, such as wastewater treatment plants, to ensure compliance with environmental regulations and policies. Prepare permit applications or review compliance with environmental permits. Create models to demonstrate or predict the process by which pollutants move through or impact an environment.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<td>Hourly Wage</td>
<td>2016 Estimated Employment:</td>
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<tr>
<td>Entry</td>
<td>240</td>
</tr>
<tr>
<td>$15.17</td>
<td>2026 Projected Employment:</td>
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<td>Average</td>
<td>260</td>
</tr>
<tr>
<td>$25.15</td>
<td>Average Total Openings:</td>
</tr>
<tr>
<td>Experienced</td>
<td>25</td>
</tr>
<tr>
<td>$30.14</td>
<td>Annual Growth Rate:</td>
</tr>
<tr>
<td></td>
<td>0.80%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Air Quality Instrument Specialist
Engineer Technician
Environmental Engineering Assistant
Environmental Engineering Technician
Environmental Field Technician
Environmental Specialist
Environmental Technician
Haz Tech (Hazardous Technician)
Industrial Waste Inspector
Senior Environmental Technician

Post-Secondary Institutions with Programs
Northwest-Shoals Community College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Environmental Engineers

Research, design, plan, or perform engineering duties in the prevention, control, and remediation of environmental hazards using various engineering disciplines. Work may include waste treatment, site remediation, or pollution control technology.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Provide technical support for environmental remediation or litigation projects, including remediation system design or determination of regulatory applicability. Prepare, review, or update environmental investigation or recommendation reports. Collaborate with environmental scientists, planners, hazardous waste technicians, engineers, experts in law or business, or other specialists to address environmental problems. Provide administrative support for projects by collecting data, providing project documentation, training staff, or performing other general administrative duties. Develop proposed project objectives and targets and report to management on progress in attaining them. Obtain, update, or maintain plans, permits, or standard operating procedures. Serve as liaison with federal, state, or local agencies or officials on issues pertaining to solid or hazardous waste program requirements. Coordinate or manage environmental protection programs or projects, assigning or evaluating work. Design, or supervise the design of, systems, processes, or equipment for control, management, or remediation of water, air, or soil quality. Advise corporations or government agencies of procedures to follow in cleaning up contaminated sites to protect people and the environment. Monitor progress of environmental improvement programs. Assist in budget implementation, forecasts, or administration. Develop site-specific health and safety protocols, such as spill contingency plans or methods for loading or transporting waste. Provide assistance with planning, quality assurance, safety inspection protocols, or sampling as part of a team conducting multimedia inspections at complex facilities. Provide environmental engineering assistance in network analysis, regulatory analysis, or planning or reviewing database development. Advise industries or government agencies about environmental policies and standards. Direct installation or operation of environmental monitoring devices or supervise related data collection programs. Inform company employees or other interested parties of environmental issues. Assess, sort, characterize, or pack known or unknown materials. Prepare hazardous waste manifests or land disposal restriction notifications. Assess the existing or potential environmental impact of land use projects on air, water, or land.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tbody>
<tr>
<td><strong>Alabama Wage Data</strong></td>
<td><strong>Alabama Projections</strong></td>
</tr>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$24.58</td>
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<tr>
<td>Average</td>
<td>$39.96</td>
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<tr>
<td>Experienced</td>
<td>$47.66</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Air Pollution Control Engineer
Chief, Pesticides and Toxic Substances Branch
Environmental Analyst
Environmental Engineer
Environmental Remediation Specialist
Global Director Air and Climate Change
Hazardous Substances Engineer
Marine Engineer CPVEC (Marine Engineer Commercial Passenger Vessel Environmental Compliance)
Regulatory Environmental Compliance Manager
Sanitary Engineer

Post-Secondary Institutions with Programs
The University of Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Environmental Science and Protection Technicians, Including Health

Perform laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health, under the direction of an environmental scientist, engineer, or other specialist. May collect samples of gases, soil, water, and other materials for testing.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Monitor emission control devices to ensure they are operating properly and comply with state and federal regulations. Record test data and prepare reports, summaries, or charts that interpret test results. Maintain files, such as hazardous waste databases, chemical usage data, personnel exposure information, or diagrams showing equipment locations. Discuss test results and analyses with customers. Direct activities of workers in laboratory. Investigate hazardous conditions or spills or outbreaks of disease or food poisoning, collecting samples for analysis. Weigh, analyze, or measure collected sample particles, such as lead, coal dust, or rock, to determine concentration of pollutants. Develop or implement programs for monitoring of environmental pollution or radiation. Set up equipment or stations to monitor and collect pollutants from sites, such as smoke stacks, manufacturing plants, or mechanical equipment. Calibrate microscopes or test instruments. Collect samples of gases, soils, water, industrial wastewater, or asbestos products to conduct tests on pollutant levels or identify sources of pollution. Examine and analyze material for presence and concentration of contaminants, such as asbestos, using variety of microscopes. Analyze potential environmental impacts of production process changes and recommend steps to mitigate negative impacts. Provide information or technical or program assistance to government representatives, employers, or the general public on the issues of public health, environmental protection, or workplace safety. Inspect workplaces to ensure the absence of health and safety hazards, such as high noise levels, radiation, or potential lighting hazards. Determine amounts and kinds of chemicals to use in destroying harmful organisms or removing impurities from purification systems. Perform statistical analysis of environmental data. Inspect sanitary conditions at public facilities. Make recommendations to control or eliminate unsafe conditions at workplaces or public facilities. Conduct standardized tests to ensure materials or supplies used throughout power supply systems meet processing and safety specifications. Develop or implement site recycling or hazardous waste stream programs. Distribute permits, closure plans, or cleanup plans. Develop testing procedures. Initiate procedures to close down or fine establishments violating environmental or health regulations. Prepare samples or photomicrographs for testing and analysis. Calculate amount of pollutant in samples or compute air pollution or gas flow in industrial processes, using chemical and mathematical formulas.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
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<tr>
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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$14.04</td>
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<tr>
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<tr>
<td>Experienced</td>
<td>$29.49</td>
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<tr>
<td>Entry</td>
<td>$29,200</td>
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<td>$50,620</td>
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<tr>
<td>Experienced</td>
<td>$61,340</td>
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<tr>
<td><strong>2016 Estimated Employment:</strong></td>
<td>480</td>
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<td><strong>2026 Projected Employment:</strong></td>
<td>530</td>
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<td><strong>Average Total Openings:</strong></td>
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</tr>
<tr>
<td><strong>Annual Growth Rate:</strong></td>
<td>1.00%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Environmental Health Specialist
- Environmental Specialist
- Environmental Technician
- Laboratory Specialist
- Laboratory Technician
- Process Laboratory Specialist
- Public Health Sanitarian
- Sanitarian
- Water Quality Analyst
- Water Quality Specialist

**Post-Secondary Institutions with Programs**
- Bevill State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
19-2041 Environmental Scientists and Specialists, Including Health

Conduct research or perform investigation for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Using knowledge of various scientific disciplines, may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources.

Education: Most of these occupations typically require a four-year bachelor’s degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Develop methods to minimize the impact of production processes on the environment, based on the study and assessment of industrial production, environmental legislation, and physical, biological, and social environments. Monitor effects of pollution or land degradation and recommend means of prevention or control. Collect, synthesize, analyze, manage, and report environmental data, such as pollution emission measurements, atmospheric monitoring measurements, meteorological or mineralogical information, or soil or water samples. Provide scientific or technical guidance, support, coordination, or oversight to governmental agencies, environmental programs, industry, or the public. Prepare charts or graphs from data samples, providing summary information on the environmental relevance of the data. Review and implement environmental technical standards, guidelines, policies, and formal regulations that meet all appropriate requirements. Design or direct studies to obtain technical environmental information about planned projects. Conduct applied research on environmental topics, such as waste control or treatment or pollution abatement methods. Provide advice on proper standards and regulations or the development of policies, strategies, or codes of practice for environmental management. Process and review environmental permits, licenses, or related materials. Conduct environmental audits or inspections or investigations of violations. Communicate scientific or technical information to the public, organizations, or internal audiences through oral briefings, written documents, workshops, conferences, training sessions, or public hearings. Supervise or train students, environmental technologists, technicians, or other related staff. Analyze data to determine validity, quality, and scientific significance and to interpret correlations between human activities and environmental effects. Research sources of pollution to determine their effects on the environment and to develop theories or methods of pollution abatement or control. Develop the technical portions of legal documents, administrative orders, or consent decrees. Monitor environmental impacts of development activities. Determine data collection methods to be employed in research projects or surveys. Plan or develop research models, using knowledge of mathematical and statistical concepts. Evaluate violations or problems discovered during inspections to determine appropriate regulatory actions or to provide advice on the development and prosecution of regulatory cases. Develop programs designed to obtain the most productive, non-damaging use of land. Investigate and report on accidents affecting the environment.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$19.25</td>
<td>$40,030</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>Average</strong></td>
</tr>
<tr>
<td>$30.11</td>
<td>$62,630</td>
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<tr>
<td><strong>Experienced</strong></td>
<td><strong>Experienced</strong></td>
</tr>
<tr>
<td>$35.54</td>
<td>$73,930</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Environmental Analyst
- Environmental Health and Safety Specialist
- Environmental Programs Specialist
- Environmental Protection Specialist
- Environmental Scientist
- Environmental Specialist
- Hazardous Substances Scientist
- Registered Environmental Health Specialist (REHS)
- Research Environmental Scientist
- Senior Environmental Scientist

**Post-Secondary Institutions with Programs**
- Auburn University
- Birmingham Southern College
- Columbia Southern University
- Miles College
- Samford University
- The University of Alabama
- Troy University
- Tuskegee University
- University of Mobile

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Explosives Workers, Ordnance Handling Experts, and Blasters

Place and detonate explosives to demolish structures or to loosen, remove, or displace earth, rock, or other materials. May perform specialized handling, storage, and accounting procedures. Includes seismograph shooters.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Compile and keep gun and explosives records in compliance with local and federal laws. Mark patterns, locations, and depths of charge holes for drilling, and issue drilling instructions. Place safety cones around blast areas to alert other workers of danger zones, and signal workers as necessary to ensure that they clear blast sites prior to explosions. Drive trucks to transport explosives and blasting equipment to blasting sites. Insert waterproof sealers, bullets, and/or powder charges into guns, and screw gun ports back into place. Move and store inventories of explosives, loaded perforating guns, and other materials, according to established safety procedures. Maintain inventory levels, ordering new supplies as necessary. Insert, pack, and pour explosives, such as dynamite, ammonium nitrate, black powder, or slurries into blast holes; then shovel drill cuttings, admit water into boreholes, and tamp material to compact charges. Examine blast areas to determine amounts and kinds of explosive charges needed and to ensure that safety laws are observed. Set up and operate short-wave radio or field telephone equipment to transmit and receive blast information. Verify detonation of charges by observing control panels, or by listening for the sounds of blasts. Connect gun chambers to electric detonating devices, and operate controls at panelboards, in order to detonate charges in guns or to ignite chemical charges. Observe odometers, weight indicators, and instrument panels in trucks in order to position guns at predetermined points in wells. Measure depths of drilled blast holes, using weighted tape measures. Connect electrical wire to primers, and cover charges or fill blast holes with clay, drill chips, sand, or other material. Light fuses, drop detonating devices into wells or boreholes, or activate firing devices with plungers, dials, or buttons, in order to set off single or multiple blasts. Repair and service blasting, shooting, and automotive equipment, and electrical wiring and instruments, using hand tools. Clean, gauge, and lubricate gun ports. Signal hoist operators to lower torpedoes or sample-taking guns into wells and to raise equipment for sampling from blast holes after detonation. Tie specified lengths of delaying fuses into patterns in order to time sequences of explosions. Place explosive charges in holes or other spots; then detonate explosives to demolish structures or to loosen, remove, or displace earth, rock, or other materials. Set up and operate equipment such as hoists, jackhammers, or drills, in order to bore charge holes. Lower perforating guns into wells, using hoists; then use measuring devices and instrument panels to position guns in correct positions for taking samples. Assemble and position equipment, explosives, and blasting caps in holes at specified depths, or load perforating guns or torpedoes with explosives. Insert powder charges into chambers of sidewall sample-taking cylinders, and assemble cylinders, using special wrenches. Lay primacord between rows of charged blast holes, and tie cord into main lines to form blast patterns. Obtain samples of earth from sidewalls of well boreholes, using electrically exploding devices. Cut specified lengths of primacord and attach primers to cord ends. Repair electrical instruments, using electricians' hand tools.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$15.83</td>
<td>$32,930</td>
<td>160</td>
<td>180</td>
<td>1.18%</td>
</tr>
<tr>
<td>Average</td>
<td>$25.51</td>
<td>$53,060</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experienced</td>
<td>$30.35</td>
<td>$63,130</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Blaster
- Explosive Technician
- Powderman
- Unexploded Ordnance Quality Control Officer

### Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic

Set up, operate, or tend machines to extrude or draw thermoplastic or metal materials into tubes, rods, hoses, wire, bars, or structural shapes.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

**Tasks:** Maintain an inventory of materials. Measure and examine extruded products to locate defects and to check for conformance to specifications, adjusting controls as necessary to alter products. Clean work areas. Reel extruded products into rolls of specified lengths and weights. Load machine hoppers with mixed materials, using augers, or stuff rolls of plastic dough into machine cylinders. Test physical properties of products with testing devices such as acid-bath testers, burst testers, and impact testers. Adjust controls to draw or press metal into specified shapes and diameters. Install dies, machine screws, and sizing rings on machines that extrude thermoplastic or metal materials. Operate shearing mechanisms to cut rods to specified lengths. Determine setup procedures and select machine dies and parts, according to specifications. Select nozzles, spacers, and wire guides, according to diameters and lengths of rods. Start machines and set controls to regulate vacuum, air pressure, sizing rings, and temperature, and to synchronize speed of extrusion. Weigh and mix pelletized, granular, or powdered thermoplastic materials and coloring pigments. Change dies on extruding machines according to production line changes. Troubleshoot, maintain, and make minor repairs to equipment. Replace worn dies when products vary from specifications.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$9.64 Entry</td>
</tr>
<tr>
<td>Average</td>
<td>$13.42 Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>$15.31 Experienced</td>
</tr>
</tbody>
</table>

**Annual Growth Rate:** 0.58%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Equipment Technician
- Extruder Operator
- Extrusion Operator
- Extrusion Press Operator
- Machine Operator
- Metal Inspector
- Operator
- Setup Operator
- Wire Mill Operator
- Wire Mill Rover

### Post-Secondary Institutions with Programs

- George C Wallace State Community College-Hanceville
- H Councill Trenholm State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders

Set up, operate, or tend machines, such as glass forming machines, plodder machines, and tuber machines, to shape and form products, such as glassware, food, rubber, soap, brick, tile, clay, wax, tobacco, or cosmetics.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Feed products into machines by hand or conveyor. Synchronize speeds of sections of machines when producing products involving several steps or processes. Pour, scoop, or dump specified ingredients, metal assemblies, or mixtures into sections of machine prior to starting machines. Ignite burners to preheat products, or use torches to apply heat. Review work orders, specifications, or instructions to determine materials, ingredients, procedures, components, settings, and adjustments for extruding, forming, pressing, or compacting machines. Swab molds with solutions to prevent products from sticking. Examine, measure, and weigh materials or products to verify conformance to standards, using measuring devices such as templates, micrometers, or scales. Send product samples to laboratories for analysis. Complete work tickets, and place them with products. Monitor machine operations and observe lights and gauges to detect malfunctions. Record and maintain production data, such as meter readings, and quantities, types, and dimensions of materials produced. Select and install machine components, such as dies, molds, and cutters, according to specifications, using hand tools and measuring devices. Measure, mix, cut, shape, soften, and join materials and ingredients, such as powder, cornmeal, or rubber to prepare them for machine processing. Move materials, supplies, components, and finished products between storage and work areas, using work aids such as racks, hoists, and handtrucks. Activate machines to shape or form products, such as candy bars, light bulbs, balloons, or insulation panels. Measure arbors and dies to verify sizes specified on work tickets. Install, align, and adjust neck rings, press plungers, and feeder tubes. Couple air and gas lines to machines to maintain plasticity of material and to regulate solidification of final products. Press control buttons to activate machinery and equipment. Turn controls to adjust machine functions, such as regulating air pressure, creating vacuums, and adjusting coolant flow. Clean dies, arbors, compression chambers, and molds, using swabs, sponges, or air hoses. Notify supervisors when extruded filaments fail to meet standards. Adjust machine components to regulate speeds, pressures, and temperatures, and amounts, dimensions, and flow of materials or ingredients. Disassemble equipment to repair it or to replace parts, such as nozzles, punches, and filters. Thread extruded strips through water tanks and hold-down bars, or attach strands to wires and draw them through tubes. Clear jams, and remove defective or substandard materials or products. Remove molds, mold components, and feeder tubes from machinery after production is complete. Remove materials or products from molds or from extruding, forming, pressing, or compacting machines, and stack or store them for additional processing.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$11.08</td>
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<tr>
<td>Average</td>
<td>$17.76</td>
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<tr>
<td>Experienced</td>
<td>$21.10</td>
</tr>
<tr>
<td><strong>2016 Estimated Employment:</strong></td>
<td>2,640</td>
</tr>
<tr>
<td><strong>2026 Projected Employment:</strong></td>
<td>2,900</td>
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<tr>
<td><strong>Average Total Openings:</strong></td>
<td>355</td>
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<tr>
<td><strong>Annual Growth Rate:</strong></td>
<td>0.94%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Extruder Operator
Extrusion Operator
Glass Forming Crew Member
Job Change Crew Member
Machine Operator
Operator
Press Operator
Production Operator
Tuber Operator
Upkeep Mechanic

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**29-1062 Family and General Practitioners**

Physicians who diagnose, treat, and help prevent diseases and injuries that commonly occur in the general population. May refer patients to specialists when needed for further diagnosis or treatment.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** Employees in these occupations usually need over 4 years, up to and including 10 years of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Prescribe or administer treatment, therapy, medication, vaccination, and other specialized medical care to treat or prevent illness, disease, or injury. Order, perform, and interpret tests and analyze records, reports, and examination information to diagnose patients' condition. Collect, record, and maintain patient information, such as medical history, reports, or examination results. Explain procedures and discuss test results or prescribed treatments with patients. Monitor patients' conditions and progress and reevaluate treatments as necessary. Operate on patients to remove, repair, or improve functioning of diseased or injured body parts and systems. Deliver babies. Coordinate work with nurses, social workers, rehabilitation therapists, pharmacists, psychologists, and other health care providers. Advise patients and community members concerning diet, activity, hygiene, and disease prevention. Refer patients to medical specialists or other practitioners when necessary. Direct and coordinate activities of nurses, students, assistants, specialists, therapists, and other medical staff. Prepare government or organizational reports which include birth, death, and disease statistics, workforce evaluations, or medical status of individuals. Conduct research to study anatomy and develop or test medications, treatments, or procedures to prevent or control disease or injury. Train residents, medical students, and other health care professionals. Plan, implement, or administer health programs or standards in hospitals, businesses, or communities for prevention or treatment of injury or illness.

**License:** License Fee: $75.00 Annual License Renewal: $100.00 Criminal Background: $65.00 Annual ACSC Renewal Fee: $150.00

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
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<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$48.12</td>
<td>$100,080</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$100.19</td>
<td>$208,400</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$126.23</td>
<td>$262,550</td>
</tr>
</tbody>
</table>

| 2016 Estimated Employment: | 650 |
| 2026 Projected Employment: | 730 |
| Average Total Openings:    | 25  |
| Annual Growth Rate:        | 1.17% |

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Board Certified Family Physician
- Family Medicine Physician
- Family Physician
- Family Practice Medical Doctor (FP MD)
- Family Practice Physician
- Family Practitioner
- Medical Doctor (MD)
- Medical Staff Physician
- Physician
- Primary Care Physician

**Post-Secondary Institutions with Programs**
- Alabama College of Osteopathic Medicine
- University of Alabama at Birmingham
- University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-3041 Farm Equipment Mechanics and Service Technicians
Diagnose, adjust, repair, or overhaul farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Clean and lubricate parts. Repair or replace defective parts, using hand tools, milling and woodworking machines, lathes, welding equipment, grinders, or saws. Maintain, repair, and overhaul farm machinery and vehicles, such as tractors, harvesters, and irrigation systems. Dismantle defective machines for repair, using hand tools. Record details of repairs made and parts used. Reassemble machines and equipment following repair, testing operation and making adjustments as necessary. Examine and listen to equipment, read inspection reports, and confer with customers to locate and diagnose malfunctions. Fabricate new metal parts, using drill presses, engine lathes, and other machine tools. Tune or overhaul engines. Test and replace electrical components and wiring, using test meters, soldering equipment, and hand tools. Drive trucks to haul tools and equipment for on-site repair of large machinery. Repair bent or torn sheet metal. Calculate bills according to record of repairs made, labor time, and parts used. Install and repair agricultural irrigation, plumbing, and sprinkler systems.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$15.33</td>
</tr>
<tr>
<td>Average</td>
<td>$21.38</td>
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<tr>
<td>Experienced</td>
<td>$24.40</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Agricultural Mechanic
Agricultural Technician
Agriculture Mechanic
Farm Equipment Mechanic
Farm Equipment Service Technician
Field Technician
Mechanic
Service Technician
Tractor Mechanic
Tractor Technician

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Fiberglass Laminators and Fabricators

Laminate layers of fiberglass on molds to form boat decks and hulls, bodies for golf carts, automobiles, or other products.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Apply lacquers and waxes to mold surfaces to facilitate assembly and removal of laminated parts. Trim excess materials from molds, using hand shears or trimming knives. Repair or modify damaged or defective glass-fiber parts, checking thicknesses, densities, and contours to ensure a close fit after repair. Pat or press layers of saturated mat or cloth into place on molds, using brushes or hands, and smooth out wrinkles and air bubbles with hands or squeegees. Cure materials by letting them set at room temperature, placing them under heat lamps, or baking them in ovens. Select precut fiberglass mats, cloth, and wood-bracing materials as required by projects being assembled. Release air bubbles and smooth seams, using rollers. Spray chopped fiberglass, resins, and catalysts onto prepared molds or dies using pneumatic spray guns with chopper attachments. Apply layers of plastic resin to mold surfaces prior to placement of fiberglass mats, repeating layers until products have the desired thicknesses and plastics have jelled. Bond wood reinforcing strips to decks and cabin structures of watercraft, using resin-saturated fiberglass. Mask off mold areas not to be laminated, using cellophane, wax paper, masking tape, or special sprays containing mold-release substances. Inspect, clean, and assemble molds before beginning work. Check all dies, templates, and cutout patterns to be used in the manufacturing process to ensure that they conform to dimensional data, photographs, blueprints, samples, or customer specifications. Trim cured materials by sawing them with diamond-impregnated cutoff wheels. Check completed products for conformance to specifications and for defects by measuring with rulers or micrometers, by checking them visually, or by tapping them to detect bubbles or dead spots. Mix catalysts into resins, and saturate cloth and mats with mixtures, using brushes.

License: License Not Required.

Outlook: Excellent

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2016 Estimated Employment: 750</td>
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<tr>
<td>Hourly Wage</td>
<td>2026 Projected Employment: 1,010</td>
</tr>
<tr>
<td>Entry</td>
<td>Average Total Openings: 130</td>
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<tr>
<td>$9.77</td>
<td>$14.07</td>
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<tr>
<td></td>
<td>$16.22</td>
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<tr>
<td>Average</td>
<td>Experienced</td>
</tr>
<tr>
<td>$14.07</td>
<td>$33,740</td>
</tr>
<tr>
<td>Experienced</td>
<td>$20,320</td>
</tr>
<tr>
<td>$16.22</td>
<td>$29,270</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Boat Builder
- Boat Carpenter
- Chopper Gun Operator
- Fiberglass Finisher
- Fiberglass Laminator
- Fiberglasser
- Gel-Coater
- Hull Line Crew Member
- Laminator
- Roller

### Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
13-2051  Financial Analysts

Conduct quantitative analyses of information affecting investment programs of public or private institutions.

Education:  Most of these occupations typically require a four-year bachelor's degree.

OJT:  Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks:  Recommend investments and investment timing to companies, investment firm staff, or the public. Determine the prices at which securities should be syndicated and offered to the public. Present oral or written reports on general economic trends, individual corporations, and entire industries. Collaborate with investment bankers to attract new corporate clients to securities firms. Monitor fundamental economic, industrial, and corporate developments by analyzing information from financial publications and services, investment banking firms, government agencies, trade publications, company sources, or personal interviews. Evaluate and compare the relative quality of various securities in a given industry. Inform investment decisions by analyzing financial information to forecast business, industry, or economic conditions. Monitor developments in the fields of industrial technology, business, finance, and economic theory. Interpret data on price, yield, stability, future investment-risk trends, economic influences, and other factors affecting investment programs. Prepare plans of action for investment, using financial analyses. Conduct financial analyses related to investments in green construction or green retrofitting projects. Draw charts and graphs, using computer spreadsheets, to illustrate technical reports. Purchase investments for companies in accordance with company policy. Determine the financial viability of alternative energy generation or fuel production systems, based on power source or feedstock quality, financing costs, potential revenue, and total project costs. Forecast or analyze financial costs associated with climate change or other environmental factors, such as clean water supply and demand. Evaluate financial viability and potential environmental benefits of cleantech innovations to secure capital investments from sources such as venture capital firms and government green fund grants. Research and recommend environmentally-related financial products, such as energy futures, water rights, carbon credits, government environmental funds, and cleantech industry funds and company stocks. Identify potential financial investments that are environmentally sound, considering issues such as carbon emissions and biodiversity.

License:  License Not Required.

Outlook:  Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$26.57</td>
<td>$55,260</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>Average</strong></td>
</tr>
<tr>
<td>$42.62</td>
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<tr>
<td><strong>Experienced</strong></td>
<td><strong>Experienced</strong></td>
</tr>
<tr>
<td>$50.64</td>
<td>$105,330</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Analyst
Credit Products Officer
Equity Research Analyst
Financial Analyst
Investment Analyst
Planning Analyst
Portfolio Manager
Real Estate Analyst
Securities Analyst
Trust Officer

Post-Secondary Institutions with Programs

Alabama A & M University
Alabama State University
Auburn University
Auburn University - Montgomery
Columbia Southern University
Jacksonville State University
Oakwood University
Samford University
The University of Alabama
Troy University
Tuskegee University
University of Alabama - Birmingham
University of Alabama - Huntsville
University of Montevallo
University of North Alabama
University of South Alabama
University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
13-2061  Financial Examiners

Enforce or ensure compliance with laws and regulations governing financial and securities institutions and financial and real estate transactions. May examine, verify, or authenticate records.

Education:  Most of these occupations typically require a four-year bachelor's degree.

OJT:  Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks:  Plan, supervise, and review work of assigned subordinates. Investigate activities of institutions to enforce laws and regulations and to ensure legality of transactions and operations or financial solvency. Recommend actions to ensure compliance with laws and regulations, or to protect solvency of institutions. Review balance sheets, operating income and expense accounts, and loan documentation to confirm institution assets and liabilities. Resolve problems concerning the overall financial integrity of banking institutions including loan investment portfolios, capital, earnings, and specific or large troubled accounts. Prepare reports, exhibits and other supporting schedules that detail an institution's safety and soundness, compliance with laws and regulations, and recommended solutions to questionable financial conditions. Review audit reports of internal and external auditors to monitor adequacy of scope of reports or to discover specific weaknesses in internal routines. Train other examiners in the financial examination process. Verify and inspect cash reserves, assigned collateral, and bank-owned securities to check internal control procedures. Review and analyze new, proposed, or revised laws, regulations, policies, and procedures to interpret their meaning and determine their impact. Confer with officials of real estate, securities, or financial institution industries to exchange views and discuss issues or pending cases. Direct and participate in formal and informal meetings with bank directors, trustees, senior management, counsels, outside accountants and consultants to gather information and discuss findings. Examine the minutes of meetings of directors, stockholders and committees to investigate the specific authority extended at various levels of management. Review applications for mergers, acquisitions, establishment of new institutions, acceptance in Federal Reserve System, or registration of securities sales to determine their public interest value and conformance to regulations, and recommend acceptance or rejection. Evaluate data processing applications for institutions under examination to develop recommendations for coordinating existing systems with examination procedures. Establish guidelines for procedures and policies that comply with new and revised regulations and direct their implementation. Provide regulatory compliance training to employees.

License:  License Not Required.

Outlook:  Satisfactory

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$21.64</td>
<td>$45,020</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$34.09</td>
<td>$70,900</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$40.31</td>
<td>$83,850</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Bank Secrecy Act Anti-Money Laundering Officer (BSA/AML Officer)
Community Reinvestment Act Officer (CRA Officer)
Credit Union Examiner
Credit Union Field Examiner
Examining Officer
Home Mortgage Disclosure Act Specialist (HMDA Specialist)
Principal Examiner
Senior Capital Markets Specialist
Senior Examiner
Supervisory Examiner

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
11-3031  Financial Managers

Plan, direct, or coordinate accounting, investing, banking, insurance, securities, and other financial activities of a branch, office, or department of an establishment.

Education:  Most of these occupations require a four-year bachelor's degree, but some do not.

OJT:  Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks:  Plan, direct, or coordinate the activities of workers in branches, offices, or departments of establishments, such as branch banks, brokerage firms, risk and insurance departments, or credit departments. Establish and maintain relationships with individual or business customers or provide assistance with problems these customers may encounter. Recruit staff members. Prepare operational or risk reports for management analysis. Evaluate data pertaining to costs to plan budgets. Oversee training programs. Examine, evaluate, or process loan applications. Approve, reject, or coordinate the approval or rejection of lines of credit or commercial, real estate, or personal loans. Oversee the flow of cash or financial instruments. Prepare financial or regulatory reports required by laws, regulations, or boards of directors. Develop or analyze information to assess the current or future financial status of firms. Communicate with stockholders or other investors to provide information or to raise capital. Evaluate financial reporting systems, accounting or collection procedures, or investment activities and make recommendations for changes to procedures, operating systems, budgets, or other financial control functions. Analyze and classify risks and investments to determine their potential impacts on companies. Network within communities to find and attract new business. Review collection reports to determine the status of collections and the amounts of outstanding balances. Establish procedures for custody or control of assets, records, loan collateral, or securities to ensure safekeeping. Plan, direct, and coordinate risk and insurance programs of establishments to control risks and losses. Review reports of securities transactions or price lists to analyze market conditions. Direct insurance negotiations, select insurance brokers or carriers, and place insurance. Submit delinquent accounts to attorneys or outside agencies for collection.

License:  License Not Required.

Outlook:  Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
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<td>$37.44</td>
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<td>$62.97</td>
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<tr>
<td>Experienced</td>
<td>$75.73</td>
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2016 Estimated Employment: 5,320
2026 Projected Employment: 6,270
Average Total Openings: 515
Annual Growth Rate: 1.66%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Banking Center Manager
Banking Officer
Branch Manager
Financial Center Manager
Service Center Manager

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Fitness Trainers and Aerobics Instructors

Instruct or coach groups or individuals in exercise activities. Demonstrate techniques and form, observe participants, and explain to them corrective measures necessary to improve their skills.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Massage body parts to relieve soreness, strains, and bruises. Provide students with information and resources regarding nutrition, weight control, and lifestyle issues. Conduct therapeutic, recreational, or athletic activities. Teach and demonstrate use of gymnastic and training equipment, such as trampolines and weights. Explain and enforce safety rules and regulations governing sports, recreational activities, and the use of exercise equipment. Maintain fitness equipment. Offer alternatives during classes to accommodate different levels of fitness. Plan routines, choose appropriate music, and choose different movements for each set of muscles, depending on participants' capabilities and limitations. Teach proper breathing techniques used during physical exertion. Instruct participants in maintaining exertion levels to maximize benefits from exercise routines. Evaluate individuals' abilities, needs, and physical conditions, and develop suitable training programs to meet any special requirements. Advise clients about proper clothing and shoes. Monitor participants' progress and adapt programs as needed. Promote health clubs through membership sales, and record member information. Observe participants and inform them of corrective measures necessary for skill improvement. Plan physical education programs to promote development of participants' physical attributes and social skills. Teach individual and team sports to participants through instruction and demonstration, using knowledge of sports techniques and of participants' physical capabilities. Advise participants in use of heat or ultraviolet treatments and hot baths. Maintain equipment inventories, and select, store, or issue equipment as needed. Organize and conduct competitions and tournaments. Administer emergency first aid, wrap injuries, treat minor chronic disabilities, or refer injured persons to physicians. Organize, lead, and referee indoor and outdoor games, such as volleyball, baseball, and basketball.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
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<td></td>
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<tr>
<td>Hourly Wage</td>
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<td>$9.89</td>
<td>Annual Growth Rate: 0.66%</td>
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<td>Average</td>
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<tr>
<td>$17.04</td>
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<tr>
<td>$20.62</td>
<td>$42,890</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Aerobics Instructor
Fitness Coordinator
Fitness Director
Fitness Instructor
Fitness Specialist
Fitness Trainer
Group Exercise Instructor
Group Fitness Instructor
Personal Trainer
Yoga Instructor

Post-Secondary Institutions with Programs
Alabama A & M University
Alabama State University
Athens State University
Auburn University
Columbia Southern University
Faulkner University
Huntingdon College
Jacksonville State University
Oakwood University
Samford University
Stillman College
The University of Alabama
Troy University
Tuskegee University
United States Sports Academy
University of Alabama - Birmingham
University of Mobile
University of Montevallo
University of South Alabama
University of West Alabama

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Floor Layers, Except Carpet, Wood, and Hard Tiles

Apply blocks, strips, or sheets of shock-absorbing, sound-deadening, or decorative coverings to floors.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Remove excess cement to clean finished surface. Measure and mark guidelines on surfaces or foundations, using chalk lines and dividers. Inspect surface to be covered to ensure that it is firm and dry. Trim excess covering materials, tack edges, and join sections of covering material to form tight joint. Form a smooth foundation by stapling plywood or Masonite over the floor or by brushing waterproof compound onto surface and filling cracks with plaster, putty, or grout to seal pores. Sweep, scrape, sand, or chip dirt and irregularities to clean base surfaces, correcting imperfections that may show through the covering. Lay out, position, and apply shock-absorbing, sound-deadening, or decorative coverings to floors, walls, and cabinets, following guidelines to keep courses straight and create designs. Determine traffic areas and decide location of seams. Cut covering and foundation materials, according to blueprints and sketches. Cut flooring material to fit around obstructions. Apply adhesive cement to floor or wall material to join and adhere foundation material. Heat and soften floor covering materials to patch cracks or fit floor coverings around irregular surfaces, using blowtorch. Roll and press sheet wall and floor covering into cement base to smooth and finish surface, using hand roller. Disconnect and remove appliances, light fixtures, and worn floor and wall covering from floors, walls, and cabinets.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
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<td>$10.92</td>
<td>$22,720</td>
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<td>Average</td>
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<td>Experienced</td>
<td>$17.96</td>
<td>$37,350</td>
<td></td>
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<td>1.18%</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Floor Covering Contractor
Floor Coverings Installer
Floor Layer
Flooring Helper
Flooring Installer
Flooring Mechanic
Tile Installer
Tile Setter
Vinyl Installer

Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
51-3092 Food Batchmakers
Set up and operate equipment that mixes or blends ingredients used in the manufacturing of food products. Includes candy makers and cheese makers.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Record production and test data for each food product batch, such as the ingredients used, temperature, test results, and time cycle. Follow recipes to produce food products of specified flavor, texture, clarity, bouquet, or color. Set up, operate, and tend equipment that cooks, mixes, blends, or processes ingredients in the manufacturing of food products, according to formulas or recipes. Press switches and turn knobs to start, adjust, and regulate equipment, such as beaters, extruders, discharge pipes, and salt pumps. Turn valve controls to start equipment and to adjust operation to maintain product quality. Select and measure or weigh ingredients, using English or metric measures and balance scales. Fill processing or cooking containers, such as kettles, rotating cookers, pressure cookers, or vats, with ingredients, by opening valves, by starting pumps or injectors, or by hand. Observe and listen to equipment to detect possible malfunctions, such as leaks or plugging, and report malfunctions or undesirable tastes to supervisors. Manipulate products, by hand or using machines, to separate, spread, knead, spin, cast, cut, pull, or roll products. Mix or blend ingredients, according to recipes, using a paddle or an agitator, or by controlling vats that heat and mix ingredients. Place products on carts or conveyors to transfer them to the next stage of processing. Formulate or modify recipes for specific kinds of food products. Operate refining machines to reduce the particle size of cooked batches. Homogenize or pasteurize material to prevent separation or to obtain prescribed butterfat content, using a homogenizing device. Observe gauges and thermometers to determine if the mixing chamber temperature is within specified limits, and turn valves to control the temperature. Examine, feel, and taste product samples during production to evaluate quality, color, texture, flavor, and bouquet, and document the results. Inspect and pack the final product. Grade food products according to government regulations or according to type, color, bouquet, and moisture content. Clean and sterilize vats and factory processing areas. Determine mixing sequences, based on knowledge of temperature effects and of the solubility of specific ingredients. Test food product samples for moisture content, acidity level, specific gravity, or butter-fat content, and continue processing until desired levels are reached. Give directions to other workers who are assisting in the batchmaking process. Inspect vats after cleaning to ensure that fermentable residue has been removed. Cool food product batches on slabs or in water-cooled kettles. Modify cooking and forming operations based on the results of sampling processes, adjusting time cycles and ingredients to achieve desired qualities, such as firmness or texture.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>Experienced</td>
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<td></td>
<td>$20,420</td>
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<tr>
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<td>$28,450</td>
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<td></td>
<td>$32,460</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Batching Operator
Blender
Brewing Technician
Compounder
Dough Scaler and Mixer
Machine Operator
Mixer
Process Operator
Processing Operator
Syrup Maker

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Food Preparation Workers**

Perform a variety of food preparation duties other than cooking, such as preparing cold foods and shellfish, slicing meat, and brewing coffee or tea.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Add cutlery, napkins, food, and other items to trays on assembly lines in hospitals, cafeterias, airline kitchens, and similar establishments. Operate cash register, handle money, and give correct change. Receive and store food supplies, equipment, and utensils in refrigerators, cupboards, and other storage areas. Use manual or electric appliances to clean, peel, slice, and trim foods. Keep records of the quantities of food used. Weigh or measure ingredients. Inform supervisors when equipment is not working properly and when food and supplies are getting low, and order needed items. Load dishes, glasses, and tableware into dishwashing machines. Scrape leftovers from dishes into garbage containers. Remove trash and clean kitchen garbage containers. Prepare and serve a variety of beverages such as coffee, tea, and soft drinks. Cut, slice or grind meat, poultry, and seafood to prepare for cooking. Prepare a variety of foods, such as meats, vegetables, or desserts, according to customers' orders or supervisors' instructions, following approved procedures. Package take-out foods or serve food to customers. Store food in designated containers and storage areas to prevent spoilage. Portion and wrap the food, or place it directly on plates for service to patrons. Clean and sanitize work areas, equipment, utensils, dishes, or silverware. Mix ingredients for green salads, molded fruit salads, vegetable salads, and pasta salads. Vacuum dining area and sweep and mop kitchen floor. Stock cupboards and refrigerators, and tend salad bars and buffet meals. Distribute food to waiters and waitresses to serve to customers. Butcher and clean fowl, fish, poultry, and shellfish to prepare for cooking or serving. Take and record temperature of food and food storage areas, such as refrigerators and freezers. Place food trays over food warmers for immediate service, or store them in refrigerated storage cabinets. Wash, peel, and cut various foods, such as fruits and vegetables, to prepare for cooking or serving. Assist cooks and kitchen staff with various tasks as needed, and provide cooks with needed items. Assemble meal trays with foods in accordance with patients' diets. Carry food supplies, equipment, and utensils to and from storage and work areas. Distribute menus to hospital patients, collect diet sheets, and deliver food trays and snacks to nursing units or directly to patients. Stir and strain soups and sauces. Make special dressings and sauces as condiments for sandwiches.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<tr>
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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
</tbody>
</table>

**2016 Estimated Employment:** 9,700

**2026 Projected Employment:** 10,390

**Average Total Openings:** 1,745

**Annual Growth Rate:** 0.69%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Deli Clerk (Delicatessen Clerk)
- Diet Aide
- Dietary Aide
- Dietary Assistant
- Food Preparer
- Food Service Aide
- Food Service Worker
- Nutrition Aide
- Pantry Cook
- Slicer

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
**11-9051 Food Service Managers**

Plan, direct, or coordinate activities of an organization or department that serves food and beverages.

### Education:
These occupations typically require a high school diploma.

### OJT:
Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

### Tasks:
- Count money and make bank deposits.
- Greet guests, escort them to their seats, and present them with menus and wine lists.
- Schedule and receive food and beverage deliveries, checking delivery contents to verify product quality and quantity. Test cooked food by tasting and smelling it to ensure palatability and flavor conformity.
- Schedule staff hours and assign duties. Keep records required by government agencies regarding sanitation or food subsidies.
- Monitor compliance with health and fire regulations regarding food preparation and serving, and building maintenance in lodging and dining facilities.
- Monitor food preparation methods, portion sizes, and garnishing and presentation of food to ensure that food is prepared and presented in an acceptable manner. Maintain food and equipment inventories, and keep inventory records.
- Estimate food, liquor, wine, and other beverage consumption to anticipate amounts to be purchased or requisitioned. Investigate and resolve complaints regarding food quality, service, or accommodations.
- Monitor budgets and payroll records, and review financial transactions to ensure that expenditures are authorized and budgeted.
- Establish standards for personnel performance and customer service. Establish and enforce nutritional standards for dining establishments, based on accepted industry standards.
- Perform some food preparation or service tasks, such as cooking, clearing tables, and serving food and drinks when necessary. Coordinate assignments of cooking personnel to ensure economical use of food and timely preparation.
- Monitor employee and patron activities to ensure liquor regulations are obeyed. Plan menus and food utilization, based on anticipated number of guests, nutritional value, palatability, popularity, and costs.
- Review work procedures and operational problems to determine ways to improve service, performance, or safety.
- Take dining reservations. Order and purchase equipment and supplies. Organize and direct worker training programs, resolve personnel problems, hire new staff, and evaluate employee performance in dining and lodging facilities.
- Schedule use of facilities or catering services for events such as banquets or receptions, and negotiate details of arrangements with clients.
- Record the number, type, and cost of items sold to determine which items may be unpopular or less profitable.
- Arrange for equipment maintenance and repairs, and coordinate a variety of services, such as waste removal and pest control.
- Review menus and analyze recipes to determine labor and overhead costs, and assign prices to menu items.
- Assess staffing needs and recruit staff, using methods such as newspaper advertisements or attendance at job fairs.
- Create specialty dishes and develop recipes to be used in dining facilities.

### License:
License Not Required.

### Outlook:
Satisfactory

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**Alabama Wage Data**

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<tr>
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<td>Experienced</td>
<td>$36.05</td>
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</table>

**Alabama Projections**

- **2016 Estimated Employment:** 3,430
- **2026 Projected Employment:** 3,760
- **Average Total Openings:** 410
- **Annual Growth Rate:** 0.92%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Banquet Manager
- Catering Manager
- Food and Beverage Director
- Food and Beverage Manager
- Food Service Director
- Food Service Manager
- Food Service Supervisor
- Kitchen Manager
- Restaurant General Manager
- Restaurant Manager

**Post-Secondary Institutions with Programs**

- Auburn University
- Bishop State Community College
- Columbia Southern University
- James H Faulkner State Community College
- Jefferson State Community College
- Lawson State Community College-Birmingham Campus
- The University of Alabama
- Tuskegee University

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*2018 Career Exploration Guide*

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Forensic Science Technicians**

Collect, identify, classify, and analyze physical evidence related to criminal investigations. Perform tests on weapons or substances, such as fiber, hair, and tissue to determine significance to investigation. May testify as expert witnesses on evidence or crime laboratory techniques. May serve as specialists in area of expertise, such as ballistics, fingerprinting, handwriting, or biochemistry.

**Education:**
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:**
Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

**Tasks:**
- Use chemicals or other substances to examine latent fingerprint evidence and compare developed prints to those of known persons in databases. Interpret laboratory findings or test results to identify and classify substances, materials, or other evidence collected at crime scenes. Operate and maintain laboratory equipment and apparatus. Collect evidence from crime scenes, storing it in conditions that preserve its integrity. Collect impressions of dust from surfaces to obtain and identify fingerprints. Visit morgues, examine scenes of crimes, or contact other sources to obtain evidence or information to be used in investigations. Use photographic or video equipment to document evidence or crime scenes. Keep records and prepare reports detailing findings, investigative methods, and laboratory techniques. Compare objects, such as tools, with impression marks to determine whether a specific object is responsible for a specific mark. Examine physical evidence, such as hair, fiber, wood, or soil residues to obtain information about its source and composition. Prepare solutions, reagents, or sample formulations needed for laboratory work. Review forensic analysts’ reports for technical merit. Identify and quantify drugs or poisons found in biological fluids or tissues, in foods, or at crime scenes. Examine firearms to determine mechanical condition and legal status, performing restoration work on damaged firearms to obtain information, such as serial numbers. Determine types of bullets and specific weapons used in shootings. Confer with ballistics, fingerprinting, handwriting, documents, electronics, medical, chemical, or metallurgical experts concerning evidence and its interpretation. Reconstruct crime scenes to determine relationships among pieces of evidence. Examine and analyze blood stain patterns at crime scenes. Train new technicians or other personnel on forensic science techniques. Analyze gunshot residue and bullet paths to determine how shootings occurred. Testify in court about investigative or analytical methods or findings.

**License:**
License Not Required.

**Outlook:**
Good

### Alabama Employment Outlook

<table>
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<td><strong>Annual Wage</strong></td>
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<td>$18.18</td>
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<tr>
<td>$25.81</td>
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<tr>
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<td>290</td>
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<td>Average Total Openings:</td>
<td>35</td>
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<tr>
<td>Annual Growth Rate:</td>
<td>1.10%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Crime Laboratory Analyst
- Crime Scene Analyst
- Crime Scene Technician (Crime Scene Tech)
- CSI (Crime Scene Investigator)
- Evidence Technician
- Forensic Science Examiner
- Forensic Scientist
- Forensic Specialist
- Latent Fingerprint Examiner
- Latent Print Examiner

**Post-Secondary Institutions with Programs**
- Alabama State University
- University of Alabama at Birmingham

For an explanation on omitted data, see the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
13-1131 Fundraisers

Organize activities to raise funds or otherwise solicit and gather monetary donations or other gifts for an organization. May design and produce promotional materials. May also raise awareness of the organization's work, goals, and financial needs.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Direct or supervise fundraising staff, including volunteer staff members. Identify and build relationships with potential donors. Write and send letters of thanks to donors. Create or update donor databases. Secure commitments of participation or donation from individuals or corporate donors. Explain the tax advantages of contributions to potential donors. Monitor progress of fundraising drives. Attend community events, meetings, or conferences to promote organizational goals or solicit donations or sponsorships. Solicit cash or in-kind donations or sponsorships from individual, business, or government donors. Compile or develop materials to submit to granting or other funding organizations. Conduct research to identify the goals, net worth, history of charitable donations, or other data related to potential donors, potential investors, or general donor markets. Monitor budgets, expense reports, or other financial data for fundraising organizations. Contact corporate representatives, government officials, or community leaders to increase awareness of organizational causes, activities, or needs. Write reports or prepare presentations to communicate fundraising program data. Develop or implement fundraising activities, such as annual giving campaigns or direct mail programs. Develop strategies to encourage new or increased contributions. Recruit sponsors, participants, or volunteers for fundraising events. Develop fundraising activity plans that maximize participation or contributions and minimize costs. Write speeches, press releases, or other promotional materials to increase awareness of the causes, missions, or goals of organizations seeking funds. Direct or coordinate web-based fundraising activities, such as online auctions or donation Web sites. Coordinate transportation or delivery of materials, supplies, or donations for fundraising events. Plan and direct special events for fundraising, such as silent auctions, dances, golf events, or walks. Establish fundraising or participation goals for special events or specified time periods. Design or produce materials such as posters, Web sites, or newsletters to promote, market, or advertise fundraising events. Develop corporate fundraising programs, such as employer gift-matching. Secure speakers for charitable events, community meetings, or conferences to increase awareness of charitable, nonprofit, or political causes. Prepare materials for charitable events, such as fundraising envelopes, bid sheets, or gift bags. Develop and maintain media contact lists.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>$16.78</td>
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<tr>
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<td>$29.69</td>
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<tr>
<td></td>
<td>Annual Growth Rate: 1.00%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Development Director
Direct Response Consultant
Director of Development
Executive Director of Development and Alumni Relations
Executive Director of Development, Gift Planning
Fundraising Consultant
Principal Gifts Officer
Vice President for Philanthropy
Vice President of Major Gifts and Planned Giving
Vice President, Marketing & Development

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**11-9061 Funeral Service Managers**

Plan, direct, or coordinate the services or resources of funeral homes. Includes activities such as determining prices for services or merchandise and managing the facilities of funeral homes.

**Education:**
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:**
Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Monitor funeral service operations to ensure that they comply with applicable policies, regulations, and laws.
- Identify skill development needs for funeral home staff. Plan and implement changes to service offerings to meet community needs or increase funeral home revenues. Complete and maintain records such as state-required documents, tracking documents, or product inventories. Schedule funerals, burials, or cremations. Sell funeral services, products, or merchandise to clients. Offer counsel and comfort to families and friends of the deceased. Consult with families or friends of the deceased to arrange funeral details, such as obituary notice wording, casket selection, or plans for services. Direct and supervise work of embalmers, funeral attendants, death certificate clerks, cosmetologists, or other staff. Evaluate the performance of vendors, contract employees, or other service providers to ensure quality and cost-efficiency. Explain goals, policies, or procedures to staff members. Direct or monitor administrative, support, repair, or maintenance services for funeral homes. Negotiate contracts for prearranged funeral services. Respond to customer complaints, legal inquiries, payment negotiations, or other post-service matters. Schedule work hours for funeral home or contract employees. Review financial statements, sales or activity reports, or other performance data to identify opportunities for cost reductions or service improvements. Set marketing, sales, or other financial goals for funeral service establishments and monitor progress toward these goals. Plan and implement sales promotions or other marketing strategies and activities for funeral home operations. Set prices or credit terms for funeral products or services. Attend or make presentations at community events to promote funeral home services or build community relationships. Interview and hire new employees. Conduct market research and analyze industry trends.

**License:**
License Not Required.

**Outlook:**
Satisfactory

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**Alabama Employment Outlook**

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$18.86</td>
<td>Entry</td>
<td>$39,230</td>
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<tr>
<td>Average</td>
<td>$40.05</td>
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<td>Experienced</td>
<td>$50.64</td>
<td>Experienced</td>
<td>$105,330</td>
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</table>

**Alabama Projections**

- **Average Total Openings:** 65
- **Annual Growth Rate:** 0.71%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Arranging Funeral Director
- Assistant Manager of Operations
- Funeral Home Location Manager
- Funeral Home Manager
- Funeral Service Manager
- Location Manager
- Market Manager
- Mortuary Operations Manager
- Sales Manager, Prearranged Funerals
- Scheduling Manager

**Post-Secondary Institutions with Programs**
- Bishop State Community College
- Jefferson State Community College

---

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
11-1021 General and Operations Managers

Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services.

**Education:**
Most of these occupations typically require a four-year bachelor's degree.

**OJT:**
Employees in these occupations usually need Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training. of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Monitor suppliers to ensure that they efficiently and effectively provide needed goods or services within budgetary limits.
- Direct and coordinate activities of businesses or departments concerned with the production, pricing, sales, or distribution of products. Direct administrative activities directly related to making products or providing services. Prepare staff work schedules and assign specific duties. Review financial statements, sales or activity reports, or other performance data to measure productivity or goal achievement or to identify areas needing cost reduction or program improvement. Manage the movement of goods into and out of production facilities to ensure efficiency, effectiveness, or sustainability of operations. Direct or coordinate financial or budget activities to fund operations, maximize investments, or increase efficiency. Direct non-merchandising departments of businesses, such as advertising or purchasing. Perform sales floor work, such as greeting or assisting customers, stocking shelves, or taking inventory. Set prices or credit terms for goods or services based on forecasts of customer demand. Establish or implement departmental policies, goals, objectives, or procedures in conjunction with board members, organization officials, or staff members. Plan or direct activities such as sales promotions that require coordination with other department managers. Implement or oversee environmental management or sustainability programs addressing issues such as recycling, conservation, or waste management. Plan store layouts or design displays. Perform personnel functions such as selection, training, or evaluation. Develop or implement product-marketing strategies, including advertising campaigns or sales promotions. Recommend locations for new facilities or oversee the remodeling or renovating of current facilities.

**License:**
License Not Required.

**Outlook:**
Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$29.20</td>
<td>$60,730</td>
<td>27,840</td>
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<td>0.92%</td>
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<tr>
<td>Average</td>
<td>$58.04</td>
<td>$120,730</td>
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<td>2,610</td>
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<tr>
<td>Experienced</td>
<td>$72.46</td>
<td>$150,720</td>
<td></td>
<td></td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Business Manager
- Facilities Manager
- Facility Manager
- General Manager (GM)
- Operations Director
- Operations Manager
- Plant Manager
- Plant Superintendent
- Production Manager
- Store Manager

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.
19-2042 Geoscientists, Except Hydrologists and Geographers

Study the composition, structure, and other physical aspects of the Earth. May use geological, physics, and mathematics knowledge in exploration for oil, gas, minerals, or underground water; or in waste disposal, land reclamation, or other environmental problems. May study the Earth's internal composition, atmospheres, oceans, and its magnetic, electrical, and gravitational forces. Includes mineralogists, crystallographers, paleontologists, stratigraphers, geodesists, and seismologists.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Analyze and interpret geological, geochemical, or geophysical information from sources such as survey data, well logs, bore holes, or aerial photos. Analyze and interpret geological data, using computer software. Advise construction firms or government agencies on dam or road construction, foundation design, land use, or resource management. Prepare geological maps, cross-sectional diagrams, charts, or reports concerning mineral extraction, land use, or resource management, using results of fieldwork or laboratory research. Conduct geological or geophysical studies to provide information for use in regional development, site selection, or development of public works projects. Locate and review research articles or environmental, historical, or technical reports. Assess ground or surface water movement to provide advice on issues such as waste management, route and site selection, or the restoration of contaminated sites. Plan or conduct geological, geochemical, or geophysical field studies or surveys, sample collection, or drilling and testing programs used to collect data for research or application. Locate and estimate probable natural gas, oil, or mineral ore deposits or underground water resources, using aerial photographs, charts, or research or survey results. Design geological mine maps, monitor mine structural integrity, or advise and monitor mining crews. Investigate the composition, structure, or history of the Earth's crust through the collection, examination, measurement, or classification of soils, minerals, rocks, or fossil remains. Communicate geological findings by writing research papers, participating in conferences, or teaching geological science at universities. Identify deposits of construction materials suitable for use as concrete aggregates, road fill, or other applications. Measure characteristics of the Earth, such as gravity or magnetic fields, using equipment such as seismographs, gravimeters, torsion balances, or magnetometers. Identify risks for natural disasters, such as mudslides, earthquakes, or volcanic eruptions. Inspect construction projects to analyze engineering problems, using test equipment or drilling machinery. Test industrial diamonds or abrasives, soil, or rocks to determine their geological characteristics, using optical, x-ray, heat, acid, or precision instruments. Develop applied software for the analysis and interpretation of geological data.

License: Biennial License Fee: $150.00 Biennial Renewal Fee: $150.00 New Applicant Fee: $150.00 Fundamentals of Geology Examination Fee: $150.00 Practice of Geology Examination Fee: $250.00

Outlook: Satisfactory

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td><strong>Entry</strong></td>
<td>$21.56</td>
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<tr>
<td><strong>Average</strong></td>
<td>$35.37</td>
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<td><strong>Experienced</strong></td>
<td>$42.28</td>
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<tr>
<td></td>
<td>$87,930</td>
</tr>
</tbody>
</table>

Annual Growth Rate: 0.99%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Engineering Geologist
- Environmental Protection Geologist
- Exploration Geologist
- Geological Specialist
- Geologist
- Geophysicist
- Geoscientist
- Mine Geologist
- Petroleum Geologist
- Project Geologist

Post-Secondary Institutions with Programs
- Auburn University
- The University of Alabama
- University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Glaziers
Install glass in windows, skylights, store fronts, and display cases, or on surfaces, such as building fronts, interior walls, ceilings, and tabletops.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Select the type or color of glass or mirror according to specifications. Cut, assemble, fit, or attach metal-framed glass enclosures for showers, bathtubs, display cases, skylights, solariums, or other structures. Drive trucks to installation sites and unload mirrors, glass equipment, or tools. Determine plumb of walls or ceilings, using plumb lines and levels. Cut, fit, install, repair, or replace glass or glass substitutes, such as plastic or aluminum, in building interiors or exteriors or in furniture or other products. Confer with customers to determine project requirements or to provide cost estimates. Set glass doors into frames and bolt metal hinges, handles, locks, or other hardware to attach doors to frames and walls. Pack spaces between moldings and glass with glazing compounds and trim excess material with glazing knives. Read and interpret blueprints or specifications to determine size, shape, color, type, or thickness of glass, location of framing, installation procedures, or staging or scaffolding materials required. Measure mirrors and dimensions of areas to be covered to determine work procedures. Prepare glass for cutting by resting it on rack edges or against cutting tables and brushing thin layer of oil along cutting lines or dipping cutting tools in oil. Load and arrange glass or mirrors onto delivery trucks, using suction cups or cranes to lift glass. Install pre-assembled metal or wood frameworks for windows or doors to be fitted with glass panels, using hand tools. Cut and attach mounting strips, metal or wood moldings, rubber gaskets, or metal clips to surfaces in preparation for mirror installation. Secure mirrors in position, using mastic cement, putty, bolts, or screws. Fasten glass panes into wood sashes or frames with clips, points, or moldings, adding weather seals or putty around pane edges to seal joints. Move furniture to clear work sites and cover floors or furnishings with drop cloths. Grind or polish glass, smoothing edges when necessary. Measure and mark outlines or patterns on glass to indicate cutting lines. Operate cranes or hoists with suction cups to lift large, heavy pieces of glass. Fabricate or install metal sashes or moldings for glass installation, using aluminum or steel framing. Cut and remove broken glass prior to installing replacement glass. Assemble, erect, or dismantle scaffolds, rigging, or hoisting equipment. Score glass with cutters' wheels, breaking off excess glass by hand or with notched tools. Create patterns on glass by etching, sandblasting, or painting designs. Assemble and cement sections of stained glass together. Measure, cut, fit, and press anti-glare adhesive film to glass or spray glass with tinting solution to prevent light glare.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>$12.86</td>
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<tr>
<td>Average</td>
<td>$17.22</td>
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<tr>
<td>Experienced</td>
<td>$19.40</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Automobile Glass Technician
- Commercial Glazier
- Foreman
- Glass Installer
- Glass Technician
- Glazer
- Glazier
- Glazing Superintendent
- Journeyman Glazier
- Master Glazier

### Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.
Hairdressers, Hairstylists, and Cosmetologists

Provide beauty services, such as shampooing, cutting, coloring, and styling hair, and massaging and treating scalp. May apply makeup, dress wigs, perform hair removal, and provide nail and skin care services.

**Education:**
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:**
Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
Cut, trim and shape hair or hairpieces, based on customers' instructions, and analysis of patrons' hair and facial features to determine and recommend beauty treatment or suggest hair styles. Keep work stations clean. Sanitize tools, such as scissors and combs. Schedule client appointments. Operate cash registers. Shampoo, rinse, condition, and dry hair and scalp or hairpieces with water, liquid soap, or other solutions. Demonstrate and sell hair care products and cosmetics. Apply artificial fingernails. Update and maintain customer information records, such as beauty services provided. Massage and treat scalp for hygienic and remedial purposes, using hands, fingers, or vibrating equipment. Comb, brush, and spray hair or wigs to set style. Apply water, setting, straightening or waving solutions to hair and use curlers, rollers, hot combs and curling irons to press and curl hair. Develop new styles and techniques. Recommend and explain the use of products. Clean, shape, and polish fingernails and toenails, using files and nail polish. Bleach, dye, or tint hair, using applicator or brush. Give facials to patrons, using special compounds, such as lotions and creams. Shape eyebrows and remove facial hair, using depilatory cream, tweezers, electrolysis or wax. Administer therapeutic medication and advise patron to seek medical treatment for chronic or contagious scalp conditions. Attach wigs or hairpieces to model heads and dress wigs and hairpieces according to instructions, samples, sketches or photographs.

**License:**
Original License Fee: $40.00 Written Examination Fee: $75.00 Biennial Renewal Fee: $80.00 Practical Examination Fee: $130.00 Reciprocity Fee: $100.00 Apprentice Fee: $75.00

**Outlook:**
Satisfactory

### Alabama Employment Outlook

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<tr>
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<th>Alabama Projections</th>
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<td></td>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td></td>
<td>Entry</td>
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<td>Entry</td>
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<tr>
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<tr>
<td>Experienced</td>
<td>$27,560</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Barber Stylist
- Beautician
- Cosmetologist
- Hair Dresser
- Hair Stylist
- Hairdresser
- Hairstylist
- Manager Stylist
- Master Cosmetologist
- Stylist

### Post-Secondary Institutions with Programs
- Bevill State Community College
- Bishop State Community College
- Central Alabama Community College
- Gadsden State Community College
- George C Wallace Community College
- H Councill Trenholm State Community College
- J F Drake State Community and Technical College
- J F Ingram State Technical College
- John C Calhoun State Community College
- Lawson State Community College-Birmingham Campus
- Lurleen B Wallace Community College
- Northeast Alabama Community College
- Northwest-Shoals Community College
- Reid State Technical College
- Remington College-Mobile Campus
- Shelton State Community College
- Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-4041 Hazardous Materials Removal Workers

Identify, remove, pack, transport, or dispose of hazardous materials, including asbestos, lead-based paint, waste oil, fuel, transmission fluid, radioactive materials, or contaminated soil. Specialized training and certification in hazardous materials handling or a confined entry permit are generally required. May operate earth-moving equipment or trucks.

Education: These occupations typically require less than a high school diploma - or the equivalent.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Organize or track the locations of hazardous items in landfills. Drive trucks or other heavy equipment to convey contaminated waste to designated sea or ground locations. Operate machines or equipment to remove, package, store, or transport loads of waste materials. Comply with prescribed safety procedures or federal laws regulating waste disposal methods. Record numbers of containers stored at disposal sites, specifying amounts or types of equipment or waste disposed. Identify or separate waste products or materials for recycling or reuse. Operate cranes to move or load baskets, casks, or canisters. Build containment areas prior to beginning abatement or decontamination work. Sort specialized hazardous waste at landfills or disposal centers, following proper disposal procedures. Identify asbestos, lead, or other hazardous materials to be removed, using monitoring devices. Package, store, or move irradiated fuel elements in the underwater storage basins of nuclear reactor plants, using machines or equipment. Apply bioremediation techniques to hazardous wastes to allow naturally occurring bacteria to break down toxic substances. Prepare hazardous material for removal or storage. Upload baskets of irradiated elements onto machines that insert fuel elements into canisters and secure lids. Load or unload materials into containers or onto trucks, using hoists or forklifts. Remove asbestos or lead from surfaces, using hand or power tools such as scrapers, vacuums, or high-pressure sprayers. Remove or limit contamination following emergencies involving hazardous substances. Process e-waste, such as computer components containing lead or mercury. Clean contaminated equipment or areas for re-use, using detergents or solvents, sandblasters, filter pumps, or steam cleaners. Clean mold-contaminated sites by removing damaged porous materials or thoroughly cleaning all contaminated nonporous materials. Mix or pour concrete into forms to encase waste material for disposal.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>Entry</td>
<td>$13.54</td>
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<td>$24.69</td>
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<tr>
<td></td>
<td>$51,350</td>
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<tr>
<td></td>
<td>$28,160</td>
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<td>$43,620</td>
</tr>
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<td></td>
<td>$51,350</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Abatement Worker
Asbestos Abatement Worker
Asbestos Hazard Abatement Worker
Asbestos Remover
Asbestos Worker
Decontamination / Decommissioning Operator (D & D Operator)
Field Technician
Hazmat Technician (Hazardous Materials Technician)
Site Worker
Waste Handling Technician

Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors

Promote worksite or product safety by applying knowledge of industrial processes, mechanics, chemistry, psychology, and industrial health and safety laws. Includes industrial product safety engineers.

**Education:** Most of these occupations require a four-year bachelor's degree, but some do not.

**OJT:** Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

**Tasks:** Investigate industrial accidents, injuries, or occupational diseases to determine causes and preventive measures. Inspect facilities, machinery, and safety equipment to identify and correct potential hazards, and to ensure safety regulation compliance. Conduct or coordinate worker training in areas such as safety laws and regulations, hazardous condition monitoring, and use of safety equipment. Maintain and apply knowledge of current policies, regulations, and industrial processes. Report or review findings from accident investigations, facilities inspections, or environmental testing. Evaluate adequacy of actions taken to correct health inspection violations. Recommend process and product safety features that will reduce employees' exposure to chemical, physical, and biological work hazards. Interpret safety regulations for others interested in industrial safety, such as safety engineers, labor representatives, and safety inspectors. Review plans and specifications for construction of new machinery or equipment to determine whether all safety requirements have been met. Interview employers and employees to obtain information about work environments and workplace incidents. Review employee safety programs to determine their adequacy. Conduct or direct testing of air quality, noise, temperature, or radiation levels to verify compliance with health and safety regulations. Provide technical advice and guidance to organizations on how to handle health-related problems and make needed changes. Maintain liaisons with outside organizations, such as fire departments, mutual aid societies, and rescue teams, so that emergency responses can be facilitated. Plan and conduct industrial hygiene research. Compile, analyze, and interpret statistical data related to occupational illnesses and accidents. Write and revise safety regulations and codes. Confer with medical professionals to assess health risks and to develop ways to manage health issues and concerns. Install safety devices on machinery, or direct device installation. Design and build safety equipment. Check floors of plants to ensure that they are strong enough to support heavy machinery.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
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<tr>
<td>Entry</td>
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<tr>
<td>Average</td>
<td>$47.46</td>
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<tr>
<td>Experienced</td>
<td>$54.41</td>
<td>$113,170</td>
<td>40</td>
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</table>

**Average Total Openings:** 40

**Annual Growth Rate:** 1.16%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Occupational Health and Safety Specialists
- Computer User Support Specialists
- Information Security Analysts
- Electrical Engineers
- Fire Investigators
- Coroners
- Pharmacists
- Physician Assistants
- Epidemiologists
- Computer Systems Analysts

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
Health Educators

Provide and manage health education programs that help individuals, families, and their communities maximize and maintain healthy lifestyles. Collect and analyze data to identify community needs prior to planning, implementing, monitoring, and evaluating programs designed to encourage healthy lifestyles, policies, and environments. May serve as a resource to assist individuals, other healthcare workers, or the community, and may administer fiscal resources for health education programs.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Provide guidance to agencies and organizations on assessment of health education needs and on development and delivery of health education programs. Maintain databases, mailing lists, telephone networks, and other information to facilitate the functioning of health education programs. Document activities and record information, such as the numbers of applications completed, presentations conducted, and persons assisted. Prepare and distribute health education materials, such as reports, bulletins, and visual aids, to address smoking, vaccines, and other public health concerns. Provide program information to the public by preparing and presenting press releases, conducting media campaigns, or maintaining program-related Web sites. Develop and present health education and promotion programs, such as training workshops, conferences, and school or community presentations. Develop educational materials and programs for community agencies, local government, and state government. Develop and maintain cooperative working relationships with agencies and organizations interested in public health care. Develop operational plans and policies necessary to achieve health education objectives and services. Supervise professional and technical staff in implementing health programs, objectives, and goals. Collaborate with health specialists and civic groups to determine community health needs and the availability of services and to develop goals for meeting needs. Develop, prepare, and coordinate grant applications and grant-related activities to obtain funding for health education programs and related work. Develop, conduct, or coordinate health needs assessments and other public health surveys. Develop and maintain health education libraries to provide resources for staff and community agencies. Design and conduct evaluations and diagnostic studies to assess the quality and performance of health education programs. Design and administer training programs for new employees and continuing education for existing employees.

License: License Not Required.

Outlook: Very Good

Alabama Employment Outlook

<table>
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<tr>
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<th>Alabama Projections</th>
</tr>
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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$15.90</td>
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<tr>
<td>Experienced</td>
<td>$28.75</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Certified Diabetes Educator
Child Development Specialist
Clinical Instructor
Clinical Nurse Educator
Community Health Consultant
Community Health Education Coordinator
Education Coordinator
Health Educator
Health Promotion Specialist
Public Health Educator

Post-Secondary Institutions with Programs
Huntingdon College
Jacksonville State University
Oakwood University
South University-Montgomery
University of Alabama at Birmingham

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Healthcare Social Workers

Provide individuals, families, and groups with the psychosocial support needed to cope with chronic, acute, or terminal illnesses. Services include advising family caregivers, providing patient education and counseling, and making referrals for other services. May also provide care and case management or interventions designed to promote health, prevent disease, and address barriers to access to healthcare.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Advocate for clients or patients to resolve crises. Identify environmental impediments to client or patient progress through interviews and review of patient records. Monitor, evaluate, and record client progress according to measurable goals described in treatment and care plan. Refer patient, client, or family to community resources to assist in recovery from mental or physical illness and to provide access to services such as financial assistance, legal aid, housing, job placement or education. Counsel clients and patients in individual and group sessions to help them overcome dependencies, recover from illness, and adjust to life. Oversee Medicaid- and Medicare-related paperwork and recordkeeping in hospitals. Collaborate with other professionals to evaluate patients' medical or physical condition and to assess client needs. Modify treatment plans to comply with changes in clients' status. Utilize consultation data and social work experience to plan and coordinate client or patient care and rehabilitation, following through to ensure service efficacy. Supervise and direct other workers providing services to clients or patients. Plan discharge from care facility to home or other care facility. Organize support groups or counsel family members to assist them in understanding, dealing with, and supporting the client or patient. Plan and conduct programs to combat social problems, prevent substance abuse, or improve community health and counseling services. Conduct social research to advance knowledge in the social work field. Investigate child abuse or neglect cases and take authorized protective action when necessary. Develop or advise on social policy and assist in community development.

License: License Not Required.

Outlook: Good

### Alabama Employment Outlook

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<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$16.46</td>
<td>$34,230</td>
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<tr>
<td>Average</td>
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</tr>
<tr>
<td>$22.68</td>
<td>$47,170</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$25.79</td>
<td>$53,650</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Clinical Social Worker
- Dialysis Social Worker
- Director of Social Work
- Hospice Social Worker
- Medical Social Worker
- Nephrology Social Worker
- Oncology Social Worker
- Renal Social Worker
- Social Work Case Manager
- Social Worker

### Post-Secondary Institutions with Programs
- Alabama A & M University
- Alabama State University
- Auburn University
- Jacksonville State University
- Judson College
- Lawson State Community College - Birmingham
- Miles College
- Oakwood University
- Talladega College
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama - Birmingham
- University of Montevallo
- University of North Alabama
- University of South Alabama
Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Test pipe or tubing joints or connections for leaks, using pressure gauge or soap-and-water solution. Test electrical circuits or components for continuity, using electrical test equipment. Repair or replace defective equipment, components, or wiring. Discuss heating or cooling system malfunctions with users to isolate problems or to verify that repairs corrected malfunctions. Repair or service heating, ventilating, and air conditioning (HVAC) systems to improve efficiency, such as by changing filters, cleaning ducts, or refilling non-toxic refrigerants. Install, connect, or adjust thermostats, humidistats, or timers. Connect heating or air conditioning equipment to fuel, water, or refrigerant source to form complete circuit. Study blueprints, design specifications, or manufacturers' recommendations to ascertain the configuration of heating or cooling equipment components and to ensure the proper installation of components. Comply with all applicable standards, policies, or procedures, such as safety procedures or the maintenance of a clean work area. Install auxiliary components to heating or cooling equipment, such as expansion or discharge valves, air ducts, pipes, blowers, dampers, flues, or stokers. Lay out and connect electrical wiring between controls and equipment, according to wiring diagrams, using electrician's hand tools. Inspect and test systems to verify system compliance with plans and specifications or to detect and locate malfunctions. Record and report time, materials, faults, deficiencies, or other unusual occurrences on work orders. Install and test automatic, programmable, or wireless thermostats in residential or commercial buildings to minimize energy usage for heating or cooling. Adjust system controls to settings recommended by manufacturer to balance system. Install dehumidifiers or related equipment for spaces that require cool, dry air to operate efficiently, such as computer rooms. Recommend, develop, or perform preventive or general maintenance procedures, such as cleaning, power-washing, or vacuuming equipment, oiling parts, or changing filters.

License: Examination Fee: $150.00 Active Renewal Fee: $190.00 Inactive Fee $95.00

Outlook: Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$13.78</td>
<td>$28,670</td>
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<tr>
<td>$19.70</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$22.66</td>
<td>$47,120</td>
</tr>
</tbody>
</table>

Annual Growth Rate: 1.28%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Telecommunications Equipment Installers and Repairers
- Except Line Installers
- Elevator Installers and Repairers
- Electricians
- Industrial Machinery Mechanics
- Electrical and Electronics Repairers, Commercial and Industrial Equipment
- Millwrights
- Refrigeration Mechanics and Installers
- Gas Plant Operators
- Insulation Workers, Mechanical
- Automotive Specialty Technicians

### Post-Secondary Institutions with Programs

- Bevill State Community College
- Bishop State Community College
- Central Alabama Community College
- Fortis College
- Gadsden State Community College
- George C Wallace Community College-Dothan
- George C Wallace State Community College-Hanceville
- H Councill Trenholm State Community College
- J F Drake State Community and Technical College
- J F Ingram State Technical College
- Lawson State Community College-Birmingham Campus
- Lurleen B Wallace Community College
- Northwest-Shoals Community College
- Shelton State Community College
- Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Heavy and Tractor-Trailer Truck Drivers**

Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 pounds Gross Vehicle Weight (GVW). May be required to unload truck. Requires commercial drivers' license.

**Education:**

These occupations typically require a high school diploma.

**OJT:**

Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**

Check vehicles to ensure that mechanical, safety, and emergency equipment is in good working order. Perform basic vehicle maintenance tasks, such as adding oil, fuel, or radiator fluid or performing minor repairs. Maintain logs of working hours or of vehicle service or repair status, following applicable state and federal regulations. Drive trucks with capacities greater than 3 tons, including tractor-trailer combinations, to transport and deliver products, livestock, or other materials. Report vehicle defects, accidents, traffic violations, or damage to the vehicles. Plan or adjust routes based on changing conditions, using computer equipment, global positioning systems (GPS) equipment, or other navigation devices, to minimize fuel consumption and carbon emissions. Inventory and inspect goods to be moved to determine quantities and conditions. Collect delivery instructions from appropriate sources, verifying instructions and routes. Follow special cargo-related procedures, such as checking refrigeration systems for frozen foods or providing food or water for livestock. Operate equipment, such as truck cab computers, CB radios, phones, or global positioning systems (GPS) equipment to exchange necessary information with bases, supervisors, or other drivers. Read and interpret maps to determine vehicle routes. Check all load-related documentation for completeness and accuracy. Check conditions of trailers after contents have been unloaded to ensure that there has been no damage. Operate idle reduction systems or auxiliary power systems to generate power from alternative sources, such as fuel cells, to reduce idling time, to heat or cool truck cabins, or to provide power for other equipment. Follow appropriate safety procedures for transporting dangerous goods. Remove debris from loaded trailers. Read bills of lading to determine assignment details. Wrap and secure goods using pads, packing paper, containers, or straps. Maneuver trucks into loading or unloading positions, following signals from loading crew and checking that vehicle and loading equipment are properly positioned. Secure cargo for transport, using ropes, blocks, chain, binders, or covers. Crank trailer landing gear up or down to safely secure vehicles. Load or unload trucks or help others with loading or unloading, using special loading-related equipment or other equipment as necessary. Obtain receipts or signatures for delivered goods and collect payment for services when required. Inspect loads to ensure that cargo is secure. Drive trucks to weigh stations before and after loading and along routes in compliance with state regulations.

**License:**

Testing Fee: $25 Commercial Learner License $36.25 Skills Test Fee $20 Class "A" License $66.25 Class "B" License $56.25 Class "C" License $36.25

**Outlook:**

Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td><strong>Entry</strong></td>
<td>$13.10</td>
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<tr>
<td><strong>Average</strong></td>
<td>$19.27</td>
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<tr>
<td><strong>Experienced</strong></td>
<td>$22.35</td>
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<tr>
<td><strong>2016 Estimated Employment:</strong></td>
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<td><strong>2026 Projected Employment:</strong></td>
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<tr>
<td><strong>Annual Growth Rate:</strong></td>
<td>0.61%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

Delivery Driver  
Driver  
Line Haul Driver  
Log Truck Driver  
Over the Road Driver (OTR Driver)  
Production Truck Driver  
Road Driver  
Semi Truck Driver  
Tractor Trailer Operator  
Truck Driver

**Post-Secondary Institutions with Programs**

Bevill State Community College  
Bishop State Community College  
H Councill Trenholm State Technical College  
John C Calhoun State Community College  
Reid State Technical College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-3012 Helpers--Carpenters
Help carpenters by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment.

Education: These occupations typically require less than a high school diploma - or the equivalent.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Select tools, equipment, or materials from storage and transport items to work site. Clean work areas, machines, or equipment, to maintain a clean and safe job site. Fasten timbers or lumber with glue, screws, pegs, or nails and install hardware. Hold plumb bobs, sighting rods, or other equipment to aid in establishing reference points and lines. Glue and clamp edges or joints of assembled parts. Position and hold timbers, lumber, or paneling in place for fastening or cutting. Perform tie spacing layout and measure, mark, drill or cut. Smooth or sand surfaces to remove ridges, tool marks, glue, or caulking. Cut timbers, lumber, or paneling to specified dimensions. Cut and install insulating or sound-absorbing material. Drill holes in timbers or lumber. Align, straighten, plumb, or square forms for installation. Secure stakes to grids for constructions of footings, nail scabs to footing forms, and vibrate and float concrete. Erect scaffolding, shoring, or braces. Construct forms and assist in raising them to the required elevation. Install handrails under the direction of a carpenter. Cover surfaces with laminated plastic covering material. Cut tile or linoleum to fit and spread adhesives on flooring for installation.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
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</thead>
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<tr>
<td></td>
<td>2016 Estimated Employment: 480</td>
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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$9.39 $19,530</td>
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<tr>
<td>Average</td>
<td>$11.29 $23,480</td>
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<tr>
<td>Experienced</td>
<td>$12.24 $25,460</td>
</tr>
<tr>
<td></td>
<td>2026 Projected Employment: 530</td>
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<tr>
<td></td>
<td>Average Total Openings: 75</td>
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<tr>
<td></td>
<td>Annual Growth Rate: 1.00%</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Carpenter Assistant, Installer
Carpenter Helper
Carpenter's Helper
Carpenter/Labor
Carpentry
Drywall Hanger, Framer
Form Setter
Form Setter/Driver
Framing and Hanging
Hanger

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-3013 Helpers--Electricians
Help electricians by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Clean work area and wash parts. Measure, cut, and bend wire and conduit, using measuring instruments and hand tools. Maintain tools, vehicles, and equipment and keep parts and supplies in order. Transport tools, materials, equipment, and supplies to work site by hand, handtruck, or heavy, motorized truck. Requisition materials, using warehouse requisition or release forms. Strip insulation from wire ends, using wire stripping pliers, and attach wires to terminals for subsequent soldering. Perform semi-skilled and unskilled laboring duties related to the installation, maintenance and repair of a wide variety of electrical systems and equipment. Bolt component parts together to form tower assemblies, using hand tools. String transmission lines or cables through ducts or conduits, under the ground, through equipment, or to towers. Construct controllers and panels, using power drills, drill presses, taps, saws, and punches. Drill holes and pull or push wiring through openings, using hand and power tools. Examine electrical units for loose connections and broken insulation and tighten connections, using hand tools. Trace out short circuits in wiring, using test meter. Disassemble defective electrical equipment, replace defective or worn parts, and reassemble equipment, using hand tools. Thread conduit ends, connect couplings, and fabricate and secure conduit support brackets, using hand tools. Erect electrical system components and barricades, and rig scaffolds, hoists, and shoring. Operate cutting torches and welding equipment, while working with conduit and metal components to construct devices associated with electrical functions. Raise, lower, or position equipment, tools, and materials, using hoist, hand line, or block and tackle. Break up concrete, using airhammer, to facilitate installation, construction, or repair of equipment. Install copper-clad ground rods, using a manual post driver. Dig trenches or holes for installation of conduit or supports. Paint a variety of objects related to electrical functions. Solder electrical connections, using soldering iron. Trim trees and clear undergrowth along right-of-way.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>Experienced</td>
<td>Average Total Openings:</td>
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<tr>
<td>$10.30</td>
<td>295</td>
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<td>$13.33</td>
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<td>$13.33</td>
<td>Annual Growth Rate:</td>
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<td>$30,900</td>
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</table>

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

For an explanation on omitted data, see the Missing Data section in the introduction.
49-9098 Helpers--Installation, Maintenance, and Repair Workers

Help installation, maintenance, and repair workers in maintenance, parts replacement, and repair of vehicles, industrial machinery, and electrical and electronic equipment. Perform duties such as furnishing tools, materials, and supplies to other workers; cleaning work area, machines, and tools; and holding materials or tools for other workers.

**Education:** These occupations typically require a high school diploma.

**OJT:** None

**Tasks:** Tend and observe equipment and machinery to verify efficient and safe operation. Transfer tools, parts, equipment, and supplies to and from work stations and other areas. Position vehicles, machinery, equipment, physical structures, and other objects for assembly or installation, using hand tools, power tools, and moving equipment. Order new parts to maintain inventory. Adjust, maintain, and repair tools, equipment, and machines, and assist more skilled workers with similar tasks. Prepare work stations for use by mechanics and repairers. Adjust, connect, or disconnect wiring, piping, tubing, and other parts, using hand or power tools. Design, weld, and fabricate parts, using blueprints or other mechanical plans. Hold or supply tools, parts, equipment, and supplies for other workers. Examine and test machinery, equipment, components, and parts for defects to ensure proper functioning. Clean or lubricate vehicles, machinery, equipment, instruments, tools, work areas, and other objects, using hand tools, power tools, and cleaning equipment. Install or replace machinery, equipment, and new or replacement parts and instruments, using hand or power tools. Assemble and maintain physical structures, using hand or power tools. Disassemble broken or defective equipment to facilitate repair and reassemble equipment when repairs are complete. Diagnose electrical problems and install and rewire electrical components. Apply protective materials to equipment, components, and parts to prevent defects and corrosion.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$8.63</td>
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<tr>
<td><strong>Average</strong></td>
<td><strong>Average</strong></td>
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<tr>
<td>$12.40</td>
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<tr>
<td><strong>Experienced</strong></td>
<td><strong>Experienced</strong></td>
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<tr>
<td>$14.29</td>
<td>$29,720</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Building Equipment Operator (BEO)
- Facilities Maintenance Technician
- General Maintenance Mechanic
- Helper
- Maintenance Helper
- Maintenance Mechanic
- Maintenance Technician
- Mechanic Helper
- Trades Helper
- Well Tender

**Post-Secondary Institutions with Programs**
- No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-3015 Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters

Help plumbers, pipefitters, steamfitters, or pipelayers by performing duties requiring less skill. Duties include using, supplying or holding materials or tools, and cleaning work area and equipment.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Requisition tools and equipment, select type and size of pipe, and collect and transport materials and equipment to work site. Mount brackets and hangers on walls and ceilings to hold pipes, and set sleeves or inserts to provide support for pipes. Disassemble and remove damaged or worn pipe. Clean shop, work area, and machines, using solvent and rags. Measure, cut, thread and assemble new pipe, placing the assembled pipe in hangers or other supports. Fit or assist in fitting valves, couplings, or assemblies to tanks, pumps, or systems, using hand tools. Clean and renew steam traps. Cut pipe and lift up to fitters. Assist pipe fitters in the layout, assembly, and installation of piping for air, ammonia, gas, and water systems. Excavate and grade ditches, and lay and join pipe for water and sewer service. Perform rough-ins, repair and replace fixtures and water heaters, and locate, repair, or remove leaking or broken pipes. Cut or drill holes in walls or floors to accommodate the passage of pipes. Fill pipes with sand or resin to prevent distortion, and hold pipes during bending and installation. Immerse pipe in chemical solution to remove dirt, oil, and scale. Install gas burners to convert furnaces from wood, coal, or oil.

License: License Not Required.

Outlook: Good

### Alabama Employment Outlook

<table>
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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Hourly Wage</td>
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<td>Entry $10.00</td>
<td>Entry $20,810</td>
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<td>Experienced $13.34</td>
<td>Experienced $27,750</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

Drain Technician
Gas Fitter
Helper
Irrigation Installation Specialist
Irrigation Technician
Plumber's Helper
Service Technician
Sprinkler Fitter
Sprinkler Installer
Sprinkler Repair Technician

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
Helpers--Production Workers

Help production workers by performing duties requiring less skill. Duties include supplying or holding materials or tools, and cleaning work area and equipment.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Signal coworkers to direct them to move products during the production process. Help production workers by performing duties of lesser skill, such as supplying or holding materials or tools, or cleaning work areas and equipment. Position spouts or chutes of storage bins so that containers can be filled. Record information, such as the number of products tested, meter readings, or dates and times of product production. Start machines or equipment to begin production processes. Load and unload items from machines, conveyors, and conveyances. Operate machinery used in the production process, or assist machine operators. Cut or break flashing from materials or products. Remove products, machine attachments, or waste material from machines. Transfer finished products, raw materials, tools, or equipment between storage and work areas of plants and warehouses, by hand or using hand trucks or powered lift trucks. Clean and lubricate equipment. Count finished products to determine if product orders are complete. Place products in equipment or on work surfaces for further processing, inspecting, or wrapping. Prepare raw materials for processing. Wash work areas, machines, equipment, vehicles, or products. Dump materials such as prepared ingredients into machine hoppers prior to mixing. Mix ingredients according to specified procedures or formulas. Mark or tag identification on parts. Separate products according to weight, grade, size, or composition of materials used to produce them. Pack and store materials and products. Examine products to verify conformance to quality standards. Unclamp and hoist full reels from braiding, winding, or other fabricating machines, using power hoists. Observe equipment operations so that malfunctions can be detected, and notify operators of any malfunctions. Lift raw materials, finished products, and packed items, manually or using hoists. Measure amounts of products, lengths of extruded articles, or weights of filled containers to ensure conformance to specifications. Break up defective products for reprocessing. Fold products and product parts during processing. Attach slings, ropes, or cables to objects such as pipes, hoses, or bundles. Turn valves to regulate flow of liquids or air, to reverse machines, to start pumps, or to regulate equipment. Thread ends of items such as thread, cloth, and lace through needles and rollers, and around take-up tubes. Tie products in bundles for further processing or shipment, following prescribed procedures. Change machine gears, using wrenches. Perform minor repairs to machines, such as replacing damaged or worn parts. Read gauges or charts, and record data obtained.

License: License Not Required.

Outlook: Very Good

Alabama Employment Outlook

Alabama Wage Data

<table>
<thead>
<tr>
<th></th>
<th>Hourly Wage</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$8.83</td>
<td>$18,360</td>
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<tr>
<td>Average</td>
<td>$12.37</td>
<td>$25,740</td>
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<td>Experienced</td>
<td>$14.15</td>
<td>$29,420</td>
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Alabama Projections

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<tr>
<th>2016 Estimated Employment:</th>
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<td>2026 Projected Employment:</td>
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<td>Average Total Openings:</td>
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<tr>
<td>Annual Growth Rate:</td>
<td>2.01%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Assistant Operator
Helper
Laborer
Machine Operator
Material Handler
Press Helper
Production Worker
Service Person
Support Team Member
Utility Worker

Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
31-1011 Home Health Aides

Provide routine individualized healthcare such as changing bandages and dressing wounds, and applying topical medications to the elderly, convalescents, or persons with disabilities at the patient's home or in a care facility. Monitor or report changes in health status. May also provide personal care such as bathing, dressing, and grooming of patient.

Education: These occupations typically require a high school diploma.
OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.
Tasks: Bathe patients. Maintain records of patient care, condition, progress, or problems to report and discuss observations with supervisor or case manager. Administer prescribed oral medications, under the written direction of physician or as directed by home care nurse or aide, and ensure patients take their medicine. Care for patients by changing bed linens, washing and ironing laundry, cleaning, or assisting with their personal care. Provide patients with help moving in and out of beds, baths, wheelchairs, or automobiles and with dressing and grooming. Entertain, converse with, or read aloud to patients to keep them mentally healthy and alert. Care for children who are disabled or who have sick or disabled parents. Plan, purchase, prepare, or serve meals to patients or other family members, according to prescribed diets. Provide patients and families with emotional support and instruction in areas such as caring for infants, preparing healthy meals, living independently, or adapting to disability or illness. Direct patients in simple prescribed exercises or in the use of braces or artificial limbs. Check patients' pulse, temperature, and respiration. Perform a variety of duties as requested by client, such as obtaining household supplies or running errands. Massage patients or apply preparations or treatments, such as liniment, alcohol rubs, or heat-lamp stimulation. Accompany clients to doctors' offices or on other trips outside the home, providing transportation, assistance, and companionship. Change dressings.
License: License Not Required.
Outlook: Excellent

Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
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<tr>
<td></td>
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<td>8.38</td>
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<td>10.76</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Caregiver
Certified Home Health Aide (CHHA)
Certified Medical Aide (CMA)
Certified Nurses Aide (CNA)
Home Attendant
Home Care Aide
Home Health Aide (HHA)
Home Health Provider
Hospice/Home Health Aide
In Home Caregiver

Post-Secondary Institutions with Programs
Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Hotel, Motel, and Resort Desk Clerks

Accommodate hotel, motel, and resort patrons by registering and assigning rooms to guests, issuing room keys or cards, transmitting and receiving messages, keeping records of occupied rooms and guests' accounts, making and confirming reservations, and presenting statements to and collecting payments from departing guests.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Prepare for basic food service, such as setting up continental breakfast or coffee and tea supplies. Greet, register, and assign rooms to guests of hotels or motels. Issue room keys and escort instructions to bellhops. Keep records of room availability and guests' accounts, manually or using computers. Clean and maintain lobby and common areas, such as restocking supplies and watering plants. Perform bookkeeping activities, such as balancing accounts and conducting nightly audits. Verify customers' credit, and establish how the customer will pay for the accommodation. Make and confirm reservations. Advise housekeeping staff when rooms have been vacated and are ready for cleaning. Date-stamp, sort, and rack incoming mail and messages. Review accounts and charges with guests during the check out process. Transmit and receive messages, using telephones or telephone switchboards. Plan, schedule or supervise the work of other employees. Answer inquiries pertaining to hotel services, guest registration, and travel directions, or make recommendations regarding shopping, dining, or entertainment. Record guest comments or complaints, referring customers to managers as necessary. Compute bills, collect payments, and make change for guests. Contact housekeeping or maintenance staff when guests report problems. Post charges, such as those for rooms, food, liquor, or telephone calls, to ledgers, manually or by using computers. Arrange tours, taxis, or restaurant reservations for customers. Deposit guests' valuables in hotel safes or safe-deposit boxes.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$8.28</td>
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<tr>
<td>Average</td>
<td>$9.60</td>
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<tr>
<td>Experienced</td>
<td>$10.26</td>
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Alabama Wage Data

<table>
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<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$17,230</td>
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<tr>
<td>Average</td>
<td>$19,970</td>
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<tr>
<td>Experienced</td>
<td>$21,350</td>
</tr>
</tbody>
</table>

Alabama Projections

2016 Estimated Employment: 3,880
2026 Projected Employment: 4,340
Average Total Openings: 680
Annual Growth Rate: 1.13%

Related Occupations
Desk Clerk
Front Desk Agent
Front Desk Associate
Front Desk Clerk
Front Desk Supervisor
Guest Service Agent
Guest Service Representative
Guest Services Agent (GSA)
Night Auditor

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
**11-3121 Human Resources Managers**

Plan, direct, or coordinate human resources activities and staff of an organization.

**Education:** Most of these occupations typically require a four-year bachelor’s degree.

**OJT:** None

**Tasks:**
Serve as a link between management and employees by handling questions, interpreting and administering contracts and helping resolve work-related problems. Plan, direct, supervise, and coordinate work activities of subordinates and staff relating to employment, compensation, labor relations, and employee relations. Identify staff vacancies and recruit, interview, and select applicants. Advise managers on organizational policy matters, such as equal employment opportunity and sexual harassment, and recommend needed changes. Provide current and prospective employees with information about policies, job duties, working conditions, wages, opportunities for promotion, and employee benefits. Administer compensation, benefits, and performance management systems, and safety and recreation programs. Allocate human resources, ensuring appropriate matches between personnel. Maintain records and compile statistical reports concerning personnel-related data such as hires, transfers, performance appraisals, and absenteeism rates. Perform difficult staffing duties, including dealing with understaffing, refereeing disputes, firing employees, and administering disciplinary procedures. Plan, organize, direct, control, or coordinate the personnel, training, or labor relations activities of an organization. Develop, administer, and evaluate applicant tests. Study legislation, arbitration decisions, and collective bargaining contracts to assess industry trends. Oversee the evaluation, classification, and rating of occupations and job positions. Negotiate bargaining agreements and help interpret labor contracts. Investigate and report on industrial accidents for insurance carriers. Plan and conduct new employee orientation to foster positive attitude toward organizational objectives. Conduct exit interviews to identify reasons for employee termination. Prepare and follow budgets for personnel operations. Develop or administer special projects in areas such as pay equity, savings bond programs, day care, and employee awards. Represent organization at personnel-related hearings and investigations. Prepare personnel forecast to project employment needs. Analyze statistical data and reports to identify and determine causes of personnel problems and develop recommendations for improvement of organization’s personnel policies and practices. Analyze and modify compensation and benefits policies to establish competitive programs and ensure compliance with legal requirements. Analyze training needs to design employee development, language training, and health and safety programs. Contract with vendors to provide employee services, such as food service, transportation, or relocation service. Provide terminated employees with outplacement or relocation assistance.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2016 Estimated Employment: 1,410</td>
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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$31.16</td>
<td>$64,810</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>$50.80</td>
<td>$105,670</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$60.63</td>
<td>$126,110</td>
</tr>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
Employee Relations Manager
Human Resources Administration Director
Human Resources Director (HR Director)
Human Resources Manager (HR Manager)
Human Resources Operations Manager
Human Resources Vice President

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Human Resources Specialists

Perform activities in the human resource area. Includes employment specialists who screen, recruit, interview, and place workers.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

**Tasks:** Prepare or maintain employment records related to events, such as hiring, termination, leaves, transfers, or promotions, using human resources management system software. Perform searches for qualified job candidates, using sources such as computer databases, networking, Internet recruiting resources, media advertisements, job fairs, recruiting firms, or employee referrals. Review and evaluate applicant qualifications or eligibility for specified licensing, according to established guidelines and designated licensing codes. Inform job applicants of details such as duties and responsibilities, compensation, benefits, schedules, working conditions, or promotion opportunities. Schedule or administer skill, intelligence, psychological, or drug tests for current or prospective employees. Review employment applications and job orders to match applicants with job requirements. Hire employees and process hiring-related paperwork. Address employee relations issues, such as harassment allegations, work complaints, or other employee concerns. Coordinate with outside staffing agencies to secure temporary employees, based on departmental needs. Select qualified job applicants or refer them to managers, making hiring recommendations when appropriate. Develop or implement recruiting strategies to meet current or anticipated staffing needs. Contact job applicants to inform them of the status of their applications. Conduct reference or background checks on job applicants. Interpret and explain human resources policies, procedures, laws, standards, or regulations. Analyze employment-related data and prepare required reports. Confer with management to develop or implement personnel policies or procedures. Maintain and update human resources documents, such as organizational charts, employee handbooks or directories, or performance evaluation forms. Provide management with information or training related to interviewing, performance appraisals, counseling techniques, or documentation of performance issues. Maintain current knowledge of Equal Employment Opportunity (EEO) and affirmative action guidelines and laws, such as the Americans with Disabilities Act (ADA). Interview job applicants to obtain information on work history, training, education, or job skills. Evaluate recruitment or selection criteria to ensure conformance to professional, statistical, or testing standards, recommending revisions, as needed. Conduct exit interviews and ensure that necessary employment termination paperwork is completed. Advise management on organizing, preparing, or implementing recruiting or retention programs. Schedule or conduct new employee orientations. Evaluate selection or testing techniques by conducting research or follow-up activities and conferring with management or supervisory personnel.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
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<th></th>
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<tbody>
<tr>
<td></td>
<td>Hourly Wage</td>
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<tr>
<td>Entry</td>
<td>$18.28</td>
<td>$38,030</td>
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<tr>
<td>Average</td>
<td>$28.79</td>
<td>$59,890</td>
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<td>Experienced</td>
<td>$34.05</td>
<td>$70,820</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Corporate Recruiter
- Employment Coordinator
- Employment Representative
- Employment Specialist
- Human Resources Coordinator
- Human Resources HR Generalist
- Human Resources Specialist (HR Specialist)
- Personnel Coordinator
- Recruiter
- Technical Recruiter

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**17-3026 Industrial Engineering Technicians**

Apply engineering theory and principles to problems of industrial layout or manufacturing production, usually under the direction of engineering staff. May perform time and motion studies on worker operations in a variety of industries for purposes such as establishing standard production rates or improving efficiency.

**Education:**  Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:**  Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:**  Read worker logs, product processing sheets, or specification sheets to verify that records adhere to quality assurance specifications. Operate industrial hygiene equipment in manufacturing environments to reduce exposure to environmental contaminants. Study time, motion, methods, or speed involved in maintenance, production, or other operations to establish standard production rate or improve efficiency. Aid in planning work assignments in accordance with worker performance, machine capacity, production schedules, or anticipated delays. Verify that equipment is being operated and maintained according to quality assurance standards by observing worker performance. Interpret engineering drawings, schematic diagrams, or formulas for management or engineering staff. Apply statistical quality control procedures to production test data. Test selected products at specified stages in the production process for performance characteristics or adherence to specifications. Compile and evaluate statistical data to determine and maintain quality and reliability of products. Recommend modifications to existing quality or production standards to achieve optimum quality within limits of equipment capability. Order and purchase manufacturing equipment for production operations. Prepare charts, graphs, or diagrams to illustrate workflow, routing, floor layouts, material handling, or machine utilization. Evaluate data and write reports to validate or indicate deviations from existing standards. Monitor environmental management systems for compliance with environmental policies, programs, or regulations. Design new equipment or materials or recommend revision to methods of operation, material handling, equipment layout, or other changes to increase production or improve standards. Evaluate industrial operations for compliance with permits or regulations related to the generation, storage, treatment, transportation, or disposal of hazardous materials or waste. Initiate or participate in emergency response procedures to contain, secure, or clean spills of hazardous materials.

**License:**  License Not Required.

**Outlook:**  Very Good

### Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td>** hourly wage **</td>
<td>** 2016 Estimated Employment: **</td>
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<tr>
<td>Entry $18.78</td>
<td>1,080</td>
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<td>Average $28.26</td>
<td>1,410</td>
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<tr>
<td>Experienced $33.00</td>
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<table>
<thead>
<tr>
<th>** Annual wage **</th>
<th>** 2026 Projected Employment: **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry $39,050</td>
<td></td>
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<tr>
<td>Average $58,780</td>
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<tr>
<td>Experienced $68,650</td>
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<table>
<thead>
<tr>
<th>** Average Total Openings: **</th>
<th>** Annual Growth Rate: **</th>
</tr>
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<tbody>
<tr>
<td>140</td>
<td>2.70%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Engineering Technician
- Industrial Engineering Analyst
- Industrial Engineering Technician
- Manufacturing Technician
- Methods Engineer
- Process Documentation and Methods Analyst
- Process Engineer
- Process Technician
- Production Staff Worker
- Quality Control Engineering Technician (QC Engineering Technician)

**Post-Secondary Institutions with Programs**

- Central Alabama Community College
- Chattahoochee Valley Community College
- Gadsden State Community College
- George C Wallace State Community College-Hanceville
- H Councill Trenholm State Community College
- Jacksonville State University
- John C Calhoun State Community College
- Lawson State Community College-Birmingham Campus
- Southern Union State Community College
- University of West Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.

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17-2112 Industrial Engineers

Design, develop, test, and evaluate integrated systems for managing industrial production processes, including human work factors, quality control, inventory control, logistics and material flow, cost analysis, and production coordination.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Review production schedules, engineering specifications, orders, and related information to obtain knowledge of manufacturing methods, procedures, and activities. Confer with clients, vendors, staff, and management personnel regarding purchases, product and production specifications, manufacturing capabilities, or project status. Communicate with management and user personnel to develop production and design standards. Complete production reports, purchase orders, and material, tool, and equipment lists. Direct workers engaged in product measurement, inspection, and testing activities to ensure quality control and reliability. Apply statistical methods and perform mathematical calculations to determine manufacturing processes, staff requirements, and production standards. Recommend methods for improving utilization of personnel, material, and utilities. Estimate production costs, cost saving methods, and the effects of product design changes on expenditures for management review, action, and control. Develop manufacturing methods, labor utilization standards, and cost analysis systems to promote efficient staff and facility utilization. Plan and establish sequence of operations to fabricate and assemble parts or products and to promote efficient utilization. Analyze statistical data and product specifications to determine standards and establish quality and reliability objectives of finished product. Draft and design layout of equipment, materials, and workspace to illustrate maximum efficiency using drafting tools and computer. Evaluate precision and accuracy of production and testing equipment and engineering drawings to formulate corrective action plan. Study operations sequence, material flow, functional statements, organization charts, and project information to determine worker functions and responsibilities. Implement methods and procedures for disposition of discrepant material and defective or damaged parts, and assess cost and responsibility. Schedule deliveries based on production forecasts, material substitutions, storage and handling facilities, and maintenance requirements. Record or oversee recording of information to ensure currency of engineering drawings and documentation of production problems. Regulate and alter workflow schedules according to established manufacturing sequences and lead times to expedite production operations. Coordinate and implement quality control objectives, activities, or procedures to resolve production problems, maximize product reliability, or minimize costs. Formulate sampling procedures and designs and develop forms and instructions for recording, evaluating, and reporting quality and reliability data.

License: License Not Required.

Outlook: Very Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$29.07</td>
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<tr>
<td>Average</td>
<td>$42.25</td>
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<tr>
<td>Experienced</td>
<td>$48.84</td>
</tr>
</tbody>
</table>

2026 Projected Employment: 6,310
Average Total Openings: 500
Annual Growth Rate: 2.67%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Engineer
Engineering Manager
Industrial Engineer
Manufacturing Specialist
Operations Engineer
Plant Engineer
Process Engineer
Production Engineer
Supply Chain Engineer
Tool Engineer

Post-Secondary Institutions with Programs
Auburn University
University of Alabama - Huntsville

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Industrial Machinery Mechanics

Repair, install, adjust, or maintain industrial production and processing machinery or refinery and pipeline distribution systems.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Examine parts for defects, such as breakage or excessive wear. Clean, lubricate, or adjust parts, equipment, or machinery. Repair or maintain the operating condition of industrial production or processing machinery or equipment. Observe and test the operation of machinery or equipment to diagnose malfunctions, using voltmeters or other testing devices. Operate newly repaired machinery or equipment to verify the adequacy of repairs. Record parts or materials used and order or requisition new parts or materials as necessary. Record repairs and maintenance performed. Reassemble equipment after completion of inspections, testing, or repairs. Repair or replace broken or malfunctioning components of machinery or equipment. Disassemble machinery or equipment to remove parts and make repairs. Analyze test results, machine error messages, or information obtained from operators to diagnose equipment problems. Cut and weld metal to repair broken metal parts, fabricate new parts, or assemble new equipment. Demonstrate equipment functions and features to machine operators. Study blueprints or manufacturers' manuals to determine correct installation or operation of machinery. Enter codes and instructions to program computer-controlled machinery.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
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<tr>
<td>Entry</td>
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<td>Average</td>
<td>$24.40</td>
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<td>Experienced</td>
<td>$28.58</td>
<td>$59,440</td>
<td>1,225</td>
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</table>

Average Total Openings: 1,225

Annual Growth Rate: 1.97%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Fixer
- Industrial Machinery Mechanic
- Industrial Mechanic
- Loom Fixer
- Machine Adjuster
- Maintenance Mechanic
- Maintenance Technician
- Master Mechanic
- Mechanic
- Overhauler

### Post-Secondary Institutions with Programs

- Gadsden State Community College
- George C Wallace Community College - Dothan
- George C Wallace Community College - Selma
- H Councill Trenholm State Technical College
- J F Drake State Community and Technical College
- James H Faulkner State Community College
- John C Calhoun State Community College
- Lawson State Community College - Birmingham
- Northeast Alabama Community College
- Northwest-Shoals Community College - Muscle Shoals
- Shelton State Community College
- Southern Union State Community College
- University of West Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
11-3051 Industrial Production Managers

Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need work-related experience, on-the-job training and/or vocational training.

**Tasks:** Review processing schedules or production orders to make decisions concerning inventory requirements, staffing requirements, work procedures, or duty assignments, considering budgetary limitations and time constraints. Develop budgets or approve expenditures for supplies, materials, or human resources, ensuring that materials, labor, or equipment are used efficiently to meet production targets. Direct or coordinate production, processing, distribution, or marketing activities of industrial organizations. Review operations and confer with technical or administrative staff to resolve production or processing problems. Develop or implement production tracking or quality control systems, analyzing production, quality control, maintenance, or other operational reports, to detect production problems. Prepare and maintain production reports or personnel records. Set and monitor product standards, examining samples of raw products or directing testing during processing, to ensure finished products are of prescribed quality. Review plans and confer with research or support staff to develop new products or processes. Initiate or coordinate inventory or cost control programs. Institute employee suggestion or involvement programs. Hire, train, evaluate, or discharge staff or resolve personnel grievances. Maintain current knowledge of the quality control field, relying on current literature pertaining to materials use, technological advances, or statistical studies. Coordinate or recommend procedures for facility or equipment maintenance or modification, including the replacement of machines. Negotiate materials prices with suppliers.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tr>
<th></th>
<th>Alabama Wage Data</th>
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<th>Alabama Projections</th>
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<tbody>
<tr>
<td></td>
<td>Hourly Wage</td>
<td>Annual Wage</td>
<td>2016 Estimated Employment:</td>
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<tr>
<td></td>
<td>Entry</td>
<td>$32.12</td>
<td>$66,820</td>
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<td></td>
<td>Average</td>
<td>$49.26</td>
<td>$102,450</td>
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<td></td>
<td>Experienced</td>
<td>$57.82</td>
<td>$120,270</td>
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<tr>
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<td>Average Total Openings:</td>
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<td></td>
<td></td>
<td></td>
<td>Annual Growth Rate:</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

Area Plant Manager
General Production Manager
Manufacturing Coordinator
Manufacturing Manager
Plant Manager
Plant Senior Manager
Product Line Manager
Production Control Manager
Production Manager
Sub Plant Manager

### Post-Secondary Institutions with Programs

- Alabama A & M University
- Athens State University
- Auburn University
- J F Ingram State Technical College
- Shelton State Community College
- Tuskegee University
- University of Alabama in Huntsville

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Industrial Truck and Tractor Operators

Operate industrial trucks or tractors equipped to move materials around a warehouse, storage yard, factory, construction site, or similar location.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Perform routine maintenance on vehicles or auxiliary equipment, such as cleaning, lubricating, recharging batteries, fueling, or replacing liquefied-gas tank. Move levers or controls that operate lifting devices, such as forklifts, lift beams with swivel-hooks, hoists, or elevating platforms, to load, unload, transport, or stack material. Move controls to drive gasoline- or electric-powered trucks, cars, or tractors and transport materials between loading, processing, and storage areas. Inspect product load for accuracy and safely move it around the warehouse or facility to ensure timely and complete delivery. Manually or mechanically load or unload materials from pallets, skids, platforms, cars, lifting devices, or other transport vehicles. Turn valves and open chutes to dump, spray, or release materials from dump cars or storage bins into hoppers. Position lifting devices under, over, or around loaded pallets, skids, or boxes and secure material or products for transport to designated areas. Operate or tend automatic stacking, loading, packaging, or cutting machines. Signal workers to discharge, dump, or level materials. Hook tow trucks to trailer hitches and fasten attachments, such as graders, plows, rollers, or winch cables to tractors, using hitchpins. Weigh materials or products and record weight or other production data on tags or labels.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
</tbody>
</table>

Average Total Openings: 1,335

**Annual Growth Rate:** 1.13%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Checker Loader
- Fork Lift Technician
- Fork Truck Driver
- Forklift Driver
- Forklift Operator
- Lift Truck Operator
- Shag Truck Driver
- Spotter Driver
- Tow Motor Operator
- Truck Driver

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Information Security Analysts

Plan, implement, upgrade, or monitor security measures for the protection of computer networks and information. May ensure appropriate security controls are in place that will safeguard digital files and vital electronic infrastructure. May respond to computer security breaches and viruses.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Monitor current reports of computer viruses to determine when to update virus protection systems. Document computer security and emergency measures policies, procedures, and tests. Develop plans to safeguard computer files against accidental or unauthorized modification, destruction, or disclosure and to meet emergency data processing needs. Confer with users to discuss issues such as computer data access needs, security violations, and programming changes. Monitor use of data files and regulate access to safeguard information in computer files. Maintain permanent fleet cryptologic and carry-on direct support systems required in special land, sea surface and subsurface operations. Modify computer security files to incorporate new software, correct errors, or change individual access status. Encrypt data transmissions and erect firewalls to conceal confidential information as it is being transmitted and to keep out tainted digital transfers. Review violations of computer security procedures and discuss procedures with violators to ensure violations are not repeated. Train users and promote security awareness to ensure system security and to improve server and network efficiency. Coordinate implementation of computer system plan with establishment personnel and outside vendors. Perform risk assessments and execute tests of data processing system to ensure functioning of data processing activities and security measures.

License: License Not Required.

Outlook: Excellent

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$28.70</td>
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<tr>
<td>$50.07</td>
<td>$104,140</td>
</tr>
</tbody>
</table>

2016 Estimated Employment: 940
2026 Projected Employment: 1,290
Average Total Openings: 110
Annual Growth Rate: 3.22%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Data Security Administrator
Information Security Officer
Information Security Specialist
Information Systems Security Analyst
Information Systems Security Officer
Information Technology Security Analyst (IT Security Analyst)
Information Technology Specialist
Network Security Analyst
Security Analyst
Systems Analyst

Post-Secondary Institutions with Programs
Alabama State University
Auburn University
Birmingham Southern College
Columbia Southern University
Faulkner University
Herzing University - Birmingham
Miles College
Oakwood University
Remington College
Samford University
Tuskegee University
University of Alabama - Birmingham
University of Alabama - Huntsville
University of South Alabama
Insurane Appraisers, Auto Damage

Appraise automobile or other vehicle damage to determine repair costs for insurance claim settlement. Prepare insurance forms to indicate repair cost or cost estimates and recommendations. May seek agreement with automotive repair shop on repair costs.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Estimate parts and labor to repair damage, using standard automotive labor and parts cost manuals and knowledge of automotive repair. Examine damaged vehicle to determine extent of structural, body, mechanical, electrical, or interior damage. Prepare insurance forms to indicate repair cost estimates and recommendations. Evaluate practicality of repair as opposed to payment of market value of vehicle before accident. Review repair cost estimates with automobile repair shop to secure agreement on cost of repairs. Determine salvage value on total-loss vehicle. Arrange to have damage appraised by another appraiser to resolve disagreement with shop on repair cost.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$23.36</td>
<td>$48,590</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>$31.35</td>
<td>$65,220</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$35.35</td>
<td>$73,530</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

- Appraiser
- Automobile Appraiser (Auto Appraiser)
- Automobile Damage Appraiser (Auto Damage Appraiser)
- Damage Appraiser
- Field Appraiser
- Field Inspector
- Insurance Appraiser
- Material Damage Appraiser
- Outside Physical Damage Appraiser
- Physical Damage Appraiser

Post-Secondary Institutions with Programs

- Bevill State Community College
- Bishop State Community College
- Gadsden State Community College
- George C Wallace State Community College-Hanceville
- H Councill Trenholm State Community College
- J F Ingram State Technical College
- Lawson State Community College-Birmingham Campus
- Northwest-Shoals Community College
- Shelton State Community College
- Southern Union State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**43-9041 Insurance Claims and Policy Processing Clerks**

Process new insurance policies, modifications to existing policies, and claims forms. Obtain information from policyholders to verify the accuracy and completeness of information on claims forms, applications and related documents, and company records. Update existing policies and company records to reflect changes requested by policyholders and insurance company representatives.

**Education:**
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:**
Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

**Tasks:**
Enter claims information into database systems. Prepare insurance claim forms or related documents and review them for completeness. Calculate amount of claim. Post or attach information to claim file. Transmit claims for payment or further investigation. Contact insured or other involved persons to obtain missing information. Review insurance policy to determine coverage. Organize or work with detailed office or warehouse records, using computers to enter, access, search or retrieve data. Provide customer service, such as limited instructions on proceeding with claims or referrals to auto repair facilities or local contractors. Pay small claims. Apply insurance rating systems.

**License:**
License Not Required.

**Outlook:**
Satisfactory

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**Alabama Employment Outlook**

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$12.54</td>
<td>$26,070</td>
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<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$16.55</td>
<td>$34,430</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$18.56</td>
<td>$38,610</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
Human Resources Assistants, Except Payroll and Timekeeping
Billing, Cost, and Rate Clerks
Legal Secretaries
Insurance Policy Processing Clerks
License Clerks
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
Tax Preparers
Loan Interviewers and Clerks
Tellers
New Accounts Clerks

**Post-Secondary Institutions with Programs**
Central Alabama Community College
Gadsden State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
# 41-3021 Insurance Sales Agents

Sell life, property, casualty, health, automotive, or other types of insurance. May refer clients to independent brokers, work as an independent broker, or be employed by an insurance company.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

**Tasks:** Seek out new clients and develop clientele by networking to find new customers and generate lists of prospective clients. Call on policyholders to deliver and explain policy, to analyze insurance program and suggest additions or changes, or to change beneficiaries. Sell various types of insurance policies to businesses and individuals on behalf of insurance companies, including automobile, fire, life, property, medical and dental insurance, or specialized policies, such as marine, farm/crop, and medical malpractice. Explain features, advantages, and disadvantages of various policies to promote sale of insurance plans. Calculate premiums and establish payment method. Monitor insurance claims to ensure they are settled equitably for both the client and the insurer. Confer with clients to obtain and provide information when claims are made on a policy. Explain necessary bookkeeping requirements for customer to implement and provide group insurance program. Interview prospective clients to obtain data about their financial resources and needs, the physical condition of the person or property to be insured, and to discuss any existing coverage. Contact underwriter and submit forms to obtain binder coverage. Develop marketing strategies to compete with other individuals or companies who sell insurance. Install bookkeeping systems and resolve system problems. Perform administrative tasks, such as maintaining records and handling policy renewals. Inspect property, examining its general condition, type of construction, age, and other characteristics, to decide if it is a good insurance risk. Select company that offers type of coverage requested by client to underwrite policy. Plan and oversee incorporation of insurance program into bookkeeping system of company. Customize insurance programs to suit individual customers, often covering a variety of risks. Ensure that policy requirements are fulfilled, including any necessary medical examinations and the completion of appropriate forms. Attend meetings, seminars, and programs to learn about new products and services, learn new skills, and receive technical assistance in developing new accounts.

**License:** License Fee: $80.00 License Renewal Fee: $80.00 (Biennial) Title Insurance Agent: $75.00

**Outlook:** Good

## Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$14.37</td>
<td>$29,890</td>
<td>7,140</td>
<td>7,980</td>
<td>1.12%</td>
</tr>
<tr>
<td>Average</td>
<td>$37.91</td>
<td>$78,860</td>
<td></td>
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<tr>
<td>Experienced</td>
<td>$49.69</td>
<td>$103,350</td>
<td></td>
<td></td>
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</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

## Related Occupations

- Account Executive
- Account Manager
- Accounts Executive
- Insurance Agent
- Insurance Broker
- Insurance Sales Agent
- Sales Agent
- Sales Associate
- Sales Representative
- Underwriting Sales Representative

## Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.*
Interpreters and Translators
Interpret oral or sign language, or translate written text from one language into another.

Education: Most of these occupations typically require a four-year bachelor’s degree.

OJT: None

Tasks: Translate messages simultaneously or consecutively into specified languages, orally or by using hand signs, maintaining message content, context, and style as much as possible. Follow ethical codes that protect the confidentiality of information. Listen to speakers’ statements to determine meanings and to prepare translations, using electronic listening systems as necessary. Compile terminology and information to be used in translations, including technical terms such as those for legal or medical material. Refer to reference materials, such as dictionaries, lexicons, encyclopedias, and computerized terminology banks, as needed to ensure translation accuracy. Educate students, parents, staff, and teachers about the roles and functions of educational interpreters. Proofread, edit, and revise translated materials. Discuss translation requirements with clients and determine any fees to be charged for services provided. Compile information on content and context of information to be translated and on intended audience. Identify and resolve conflicts related to the meanings of words, concepts, practices, or behaviors. Read written materials, such as legal documents, scientific works, or news reports, and rewrite material into specified languages. Check translations of technical terms and terminology to ensure that they are accurate and remain consistent throughout translation revisions. Check original texts or confer with authors to ensure that translations retain the content, meaning, and feeling of the original material. Adapt translations to students’ cognitive and grade levels, collaborating with educational team members as necessary. Train and supervise other translators or interpreters. Adapt software and accompanying technical documents to another language and culture. Travel with or guide tourists who speak another language.

License: License Application Fee: $50.00 90-day Exemption Permit: $50.00 Initial and Renewal License Fee: $175.00 Initial and Renewal Permit Fee: $125.00

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$13.91</td>
</tr>
<tr>
<td>Average</td>
<td>$20.35</td>
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<tr>
<td>Experienced</td>
<td>$23.57</td>
</tr>
<tr>
<td>Average Total Openings: 35</td>
<td></td>
</tr>
<tr>
<td>Annual Growth Rate: 0.90%</td>
<td></td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Court Interpreter
Deaf Interpreter
Educational Interpreter
Interpreter
Medical Interpreter
Paraprofessional Interpreter
Sign Language Interpreter
Spanish Interpreter
Technical Translator
Translator

Post-Secondary Institutions with Programs
Auburn University
Samford University
The University of Alabama
Troy University
University of North Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Janitors and Cleaners, Except Maids and Housekeeping Cleaners

Keep buildings in clean and orderly condition. Perform heavy cleaning duties, such as cleaning floors, shampooing rugs, washing walls and glass, and removing rubbish. Duties may include tending furnace and boiler, performing routine maintenance activities, notifying management of need for repairs, and cleaning snow or debris from sidewalk.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Clean building floors by sweeping, mopping, scrubbing, or vacuuming. Mix water and detergents or acids in containers to prepare cleaning solutions, according to specifications. Follow procedures for the use of chemical cleaners and power equipment to prevent damage to floors and fixtures. Clean windows, glass partitions, or mirrors, using soapy water or other cleaners, sponges, or squeegees. Gather and empty trash. Monitor building security and safety by performing tasks such as locking doors after operating hours or checking electrical appliance use to ensure that hazards are not created. Dust furniture, walls, machines, or equipment. Clean and polish furniture and fixtures. Service, clean, or supply restrooms. Clean laboratory equipment, such as glassware or metal instruments, using solvents, brushes, rags, or power cleaning equipment. Drive vans, industrial trucks, or other vehicles required to travel to or to perform cleaning work. Requisition supplies or equipment needed for cleaning and maintenance duties. Make adjustments or minor repairs to heating, cooling, ventilating, plumbing, or electrical systems. Remove snow from sidewalks, driveways, or parking areas, using snowplows, snow blowers, or snow shovels, or spread snow melting chemicals. Set up, arrange, or remove decorations, tables, chairs, ladders, or scaffolding to prepare facilities for events, such as banquets or meetings. Move heavy furniture, equipment, or supplies, either manually or by using hand trucks. Notify managers concerning the need for major repairs or additions to building operating systems. Mow or trim lawns or shrubbery, using mowers or hand or power trimmers, and clear debris from grounds. Steam clean or shampoo carpets. Clean chimneys, flues, and connecting pipes, using power or hand tools. Strip, seal, finish, and polish floors. Spray insecticides or fumigants to prevent insect or rodent infestation. Clean and restore building interiors damaged by fire, smoke, or water, using commercial cleaning equipment.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td></td>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$8.39</td>
<td>$17,450</td>
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<tr>
<td>Average</td>
<td>$11.03</td>
<td>$22,930</td>
</tr>
<tr>
<td>Experienced</td>
<td>$12.34</td>
<td>$25,670</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Building Custodian
- Building Service Worker
- Building Services Technician
- Cleaner
- Custodial Worker
- Custodian
- Floor Tech (Floor Technician)
- Heavy Duty Custodian
- Institutional Custodian
- Janitor

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.
Laborers and Freight, Stock, and Material Movers, Hand

Manually move freight, stock, or other materials or perform other general labor. Includes all manual laborers not elsewhere classified.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Direct spouts and position receptacles, such as bins, carts, or containers, so they can be loaded. Maintain equipment storage areas to ensure that inventory is protected. Read work orders or receive oral instructions to determine work assignments or material or equipment needs. Record numbers of units handled or moved, using daily production sheets or work tickets. Move freight, stock, or other materials to and from storage or production areas, loading docks, delivery vehicles, ships, or containers, by hand or using trucks, tractors, or other equipment. Carry out general yard duties, such as performing shunting on railway lines. Attach slings, hooks, or other devices to lift cargo and guide loads. Stack cargo in locations, such as transit sheds or in holds of ships as directed, using pallets or cargo boards. Guide loads being lifted to prevent swinging. Rig or dismantle props or equipment, such as frames, scaffolding, platforms, or backdrops, using hand tools. Carry needed tools or supplies from storage or trucks and return them after use. Shovel material, such as gravel, ice, or spilled concrete, into containers or bins or onto conveyors. Sort cargo before loading and unloading. Attach identifying tags to containers or mark them with identifying information. Wash out cargo containers or storage areas. Install protective devices, such as bracing, padding, or strapping, to prevent shifting or damage to items being transported. Pack containers and re-pack damaged containers. Connect electrical equipment to power sources so that it can be tested before use. Adjust or replace equipment parts, such as rollers, belts, plugs, or caps, using hand tools. Adjust controls to guide, position, or move equipment, such as cranes, booms, or cameras. Bundle and band material such as fodder or tobacco leaves, using banding machines.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$9.02</td>
<td>$18,760</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>$12.26</td>
<td>$25,510</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$13.88</td>
<td>$28,880</td>
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<tr>
<td><strong>Average Total Openings:</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Annual Growth Rate:</strong></td>
<td></td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Dock Worker
- Laborer
- Line Tender
- Loader
- Material Handler
- Merchandise Pickup/Receiving Associate
- Receiver
- Receiving Associate
- Shipping and Receiving Materials Handler
- Warehouse Worker

**Post-Secondary Institutions with Programs**
- No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
37-3011 Landscaping and Groundskeeping Workers

Landscape or maintain grounds of property using hand or power tools or equipment. Workers typically perform a variety of tasks, which may include any combination of the following: sod laying, mowing, trimming, planting, watering, fertilizing, digging, raking, sprinkler installation, and installation of mortarsless segmental concrete masonry wall units.

Education: These occupations typically require less than a high school diploma - or the equivalent.

OJT: None

Tasks:
- Gather and remove litter. Provide proper upkeep of sidewalks, driveways, parking lots, fountains, planters, burial sites, or other grounds features. Operate vehicles or powered equipment, such as mowers, tractors, twin-axle vehicles, snow blowers, chain-saws, electric clippers, sod cutters, or pruning saws. Use hand tools, such as shovels, rakes, pruning saws, saws, hedge or brush trimmers, or axes. Care for established lawns by mulching, aerating, weeding, grubbing, removing thatch, or trimming or edging around flower beds, walks, or walls. Mow or edge lawns, using power mowers or edgers. Use irrigation methods to adjust the amount of water consumption and to prevent waste. Water lawns, trees, or plants, using portable sprinkler systems, hoses, or watering cans. Mix and spray or spread fertilizers, herbicides, or insecticides onto grass, shrubs, or trees, using hand or automatic sprayers or spreaders. Maintain irrigation systems, including winterizing the systems and starting them up in spring. Trim or pick flowers and clean flower beds. Rake, mulch, and compost leaves. Prune or trim trees, shrubs, or hedges, using shears, pruners, or chain saws. Advise customers on plant selection or care. Plan or cultivate lawns or gardens. Install rock gardens, ponds, decks, drainage systems, irrigation systems, retaining walls, fences, planters, or playground equipment. Care for natural turf fields, making sure the underlying soil has the required composition to allow proper drainage and to support the grasses used on the fields. Mark design boundaries and paint natural or artificial turf fields with team logos or names before events. Plant seeds, bulbs, foliage, flowering plants, grass, ground covers, trees, or shrubs and apply mulch for protection, using gardening tools. Follow planned landscaping designs to determine where to lay sod, sow grass, or plant flowers or foliage. Decorate gardens with stones or plants. Attach wires from planted trees to support stakes. Care for artificial turf fields, periodically removing the turf and replacing cushioning pads or vacuuming and disinfecting the turf after use to prevent the growth of harmful bacteria. Maintain or repair tools, equipment, or structures, such as buildings, greenhouses, fences, or benches, using hand or power tools. Build forms and mix and pour cement to form garden borders. Shovel snow from walks, driveways, or parking lots and spread salt in those areas. Haul or spread topsoil or spread straw over seeded soil to hold soil in place.

License: Examination Fee: $75.00 Annual Nursery Dealer Permit Fee: $20.00 Annual Professional Services Permit Fee: $175.00

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hourly</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$9.06</td>
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<tr>
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<td>$12.11</td>
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<tr>
<td>Experienced</td>
<td>$13.63</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Gardener
- Greenskeeper
- Grounds Maintenance Worker
- Grounds Person
- Grounds Worker
- Grounds/Maintenance Specialist
- Groundskeeper
- Landscape Specialist
- Landscape Technician
- Outside Maintenance Worker

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.
Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic

Set up, operate, or tend lathe and turning machines to turn, bore, thread, form, or face metal or plastic materials, such as wire, rod, or bar stock.

**Education:** These occupations typically require a high school diploma.

**OJT:** None

**Tasks:** Refill, change, and monitor the level of fluids, such as oil and coolant, in machines. Replace worn tools, and sharpen dull cutting tools and dies, using bench grinders or cutter-grinding machines. Turn valve handles to direct the flow of coolant onto work areas or to coat disks with spinning compounds. Install holding fixtures, cams, gears, and stops to control stock and tool movement, using hand tools, power tools, and measuring instruments. Select cutting tools and tooling instructions, according to written specifications or knowledge of metal properties and shop mathematics. Adjust machine controls and change tool settings to keep dimensions within specified tolerances. Lift metal stock or workpieces manually or using hoists, and position and secure them in machines, using fasteners and hand tools. Start lathe or turning machines and observe operations to ensure that specifications are met. Inspect sample workpieces to verify conformance with specifications, using instruments such as gauges, micrometers, and dial indicators. Compute unspecified dimensions and machine settings, using knowledge of metal properties and shop mathematics. Crank machines through cycles, stopping to adjust tool positions and machine controls to ensure specified timing, clearances, and tolerances. Study blueprints, layouts or charts, and job orders for information on specifications and tooling instructions, and to determine material requirements and operational sequences. Position, secure, and align cutting tools in toolholders on machines, using hand tools, and verify their positions with measuring instruments. Move controls to set cutting speeds and depths and feed rates, and to position tools in relation to workpieces. Move toolholders manually or by turning handwheels, or engage automatic feeding mechanisms to feed tools to and along workpieces. Mount attachments, such as relieving or tracing attachments, to perform operations, such as duplicating contours of templates or trimming workpieces.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<thead>
<tr>
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<th>Alabama Projections</th>
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</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$12.41</td>
<td>$25,820</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$16.96</td>
<td>$35,280</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$19.24</td>
<td>$40,010</td>
</tr>
</tbody>
</table>

**2016 Estimated Employment:** 570

**2026 Projected Employment:** 660

**Average Total Openings:** 70

**Annual Growth Rate:** 1.48%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Computer Numerical Control Lathe Operator (CNC Lathe Operator)
- Computer Numerical Control Operator (CNC Operator)
- Lathe Operator
- Lathe Set Up Person
- Machine Operator
- Numerical Control Operator (NC Operator)
- Screw Machine Operator
- Screw Machine Tool Setter
- Set Up / Operator
- Turn Operator

**Post-Secondary Institutions with Programs**
- No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
23-1011 Lawyers
Represent clients in criminal and civil litigation and other legal proceedings, draw up legal documents, or manage or advise clients on legal transactions. May specialize in a single area or may practice broadly in many areas of law.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

Tasks: Perform administrative and management functions related to the practice of law. Analyze the probable outcomes of cases, using knowledge of legal precedents. Interpret laws, rulings and regulations for individuals and businesses. Evaluate findings and develop strategies and arguments in preparation for presentation of cases. Supervise legal assistants. Advise clients concerning business transactions, claim liability, advisability of prosecuting or defending lawsuits, or legal rights and obligations. Examine legal data to determine advisability of defending or prosecuting lawsuit. Represent clients in court or before government agencies. Probate wills and represent and advise executors and administrators of estates. Gather evidence to formulate defense or to initiate legal actions, by such means as interviewing clients and witnesses to ascertain the facts of a case. Prepare, draft, and review legal documents, such as wills, deeds, patent applications, mortgages, leases, and contracts. Confer with colleagues with specialties in appropriate areas of legal issue to establish and verify bases for legal proceedings. Study Constitution, statutes, decisions, regulations, and ordinances of quasi-judicial bodies to determine ramifications for cases. Search for and examine public and other legal records to write opinions or establish ownership. Act as agent, trustee, guardian, or executor for businesses or individuals. Work in environmental law, representing public interest groups, waste disposal companies, or construction firms in their dealings with state and federal agencies. Negotiate settlements of civil disputes. Select jurors, argue motions, meet with judges, and question witnesses during the course of a trial. Present evidence to defend clients or prosecute defendants in criminal or civil litigation. Present and summarize cases to judges and juries. Prepare legal briefs and opinions, and file appeals in state and federal courts of appeal. Help develop federal and state programs, draft and interpret laws and legislation, and establish enforcement procedures.

License: Bar Examination Fee: $315.00 Alabama State Residents: $575.00 Annual License Renewal Fee: $300.00

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
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<tr>
<td>Entry</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Assistant Attorney General
Assistant Counsel
Associate Attorney
Attorney
Attorney at Law
City Attorney
Deputy Attorney General
General Counsel
Lawyer
Partner

Post-Secondary Institutions with Programs
Faulkner University
Samford University
The University of Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Library Assistants, Clerical

Compile records, sort, shelve, issue, and receive library materials such as books, electronic media, pictures, cards, slides and microfilm. Locate library materials for loan and replace material in shelving area, stacks, or files according to identification number and title. Register patrons to permit them to borrow books, periodicals, and other library materials.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Open and close library during specified hours and secure library equipment, such as computers and audio-visual equipment. Perform clerical activities, such as answering phones, sorting mail, filing, typing, word processing, and photocopying and mailing out material. Instruct patrons on how to use reference sources, card catalogs, and automated information systems. Sort books, publications, and other items according to established procedure and return them to shelves, files, or other designated storage areas. Maintain library equipment, such as photocopiers, scanners, and computers, and instruct patrons in proper use of such equipment. Manage reserve materials by placing items on reserve for library patrons, checking items in and out of library, and removing out-dated items. Inspect returned books for condition and due-date status and compute any applicable fines. Enter and update patrons’ records on computers. Repair books using mending tape, paste, and brushes or prepare books to be sent to a bindery for repair. Operate small branch libraries, under the direction of off-site librarian supervisors. Review records, such as microfilm and issue cards, to identify titles of overdue materials and delinquent borrowers. Answer routine inquiries and refer patrons in need of professional assistance to librarians. Perform accounting and bookkeeping activities, such as invoicing, maintaining financial records, budgeting, and handling cash. Place books in mailing containers, affix address labels, and secure containers with straps for mailing to blind library patrons. Locate library materials for patrons, including books, periodicals, tape cassettes, Braille volumes, and pictures. Send out notices and accept fine payments for lost or overdue books. Provide assistance to librarians in the maintenance of collections of books, periodicals, magazines, newspapers, and audio-visual and other materials. Maintain records of items received, stored, issued, and returned and file catalog cards according to system used. Take action to deal with disruptive or problem patrons. Lend, reserve, and collect books, periodicals, videotapes, and other materials at circulation desks and process materials for inter-library loans. Select substitute titles when requested materials are unavailable, following criteria such as age, education, and interests. Classify and catalog items according to content and purpose. Register new patrons and issue borrower identification cards that permit patrons to borrow books and other materials. Prepare, store, and retrieve classification and catalog information, lecture notes, or other information related to stored documents, using computers. Plan or participate in library events and programs, such as story time with children.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<th>Alabama Projections</th>
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<td>$12.58</td>
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</table>

2016 Estimated Employment: 1,340
2026 Projected Employment: 1,430
Average Total Openings: 205
Annual Growth Rate: 0.65%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Acquisitions Assistant
Cataloging Assistant
Circulation Supervisor
Library Aide
Library Assistant
Library Associate
Library Circulation Assistant
Library Clerical Assistant
Library Clerk
Library Services Assistant

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide
25-4031 Library Technicians

Assist librarians by helping readers in the use of library catalogs, databases, and indexes to locate books and other materials; and by answering questions that require only brief consultation of standard reference. Compile records; sort and shelve books or other media; remove or repair damaged books or other media; register patrons; and check materials in and out of the circulation process. Replace materials in shelving area (stacks) or files. Includes bookmobile drivers who assist with providing services in mobile libraries.

Education: Most of these occupations typically require a four-year bachelor’s degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Reserve, circulate, renew, and discharge books and other materials. File catalog cards according to system used. Sort and deliver library mail and packages. Catalogue and sort books and other print and non-print materials according to procedure and return them to shelves, files, or other designated storage areas. Check for damaged library materials, such as books or audio-visual equipment, and provide replacements or make repairs. Answer routine telephone or in-person reference inquiries, referring patrons to librarians for further assistance, when necessary. Verify bibliographical data for materials, including author, title, publisher, publication date, and edition. Deliver and retrieve items throughout the library by hand or using pushcart. Organize and maintain periodicals and reference materials. Help patrons find and use library resources, such as reference materials, audio-visual equipment, computers, and other electronic resources and provide technical assistance when needed. Enter and update patrons’ records on computers. Review subject matter of materials to be classified and select classification numbers and headings according to classification systems. Plan and conduct children's programs, community outreach programs, and other specialized programs, such as library tours. Collect fines and respond to complaints about fines. Conduct reference searches, using printed materials and in-house and online databases. Send out notices about lost or overdue books. Process interlibrary loans for patrons. Provide assistance to teachers and students by locating materials and helping to complete special projects. Maintain and troubleshoot problems with library equipment, including computers, photocopiers, and audio-visual equipment. Process print and non-print library materials to prepare them for inclusion in library collections. Compile and maintain records relating to circulation, materials, and equipment. Claim missing issues of periodicals and journals. Issue identification cards to borrowers. Collaborate with archivists to arrange for the safe storage of historical records and documents. Train other staff, volunteers, or student assistants and schedule and supervise their work. Retrieve information from central databases for storage in a library’s computer. Design, customize, and maintain databases, web pages, and local area networks.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<td>$15.09</td>
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<tr>
<td>Experienced</td>
<td>$17.13</td>
</tr>
</tbody>
</table>

Annual Growth Rate: 0.76%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Circulation Clerk
Library Aide
Library Assistant
Library Associate
Library Clerk
Library Media Technician
Library Specialist
Library Technical Assistant (LTA)
Library Technician
Page Technician

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Licensed Practical and Licensed Vocational Nurses
Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Record food and fluid intake and output. Evaluate nursing intervention outcomes, conferring with other healthcare team members as necessary. Work as part of a healthcare team to assess patient needs, plan and modify care, and implement interventions. Inventory and requisition supplies and instruments. Supervise nurses' aides or assistants. Assemble and use equipment, such as catheters, tracheotomy tubes, or oxygen suppliers. Help patients with bathing, dressing, maintaining personal hygiene, moving in bed, or standing and walking. Answer patients' calls and determine how to assist them. Provide medical treatment or personal care to patients in private home settings, such as cooking, keeping rooms orderly, seeing that patients are comfortable and in good spirits, or instructing family members in simple nursing tasks. Clean rooms and make beds. Prepare or examine food trays for conformance to prescribed diet. Observe patients, charting and reporting changes in patients' conditions, such as adverse reactions to medication or treatment, and taking any necessary action. Measure and record patients' vital signs, such as height, weight, temperature, blood pressure, pulse, or respiration. Sterilize equipment and supplies, using germicides, sterilizer, or autoclave. Collect samples, such as blood, urine, or sputum from patients, and perform routine laboratory tests on samples.

License: Initial Application Fee for LPN: $185.00 Biennial Renewal Fee for LPN: $75.00

Outlook: Satisfactory

Alabama Employment Outlook

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<th>Hourly Wage</th>
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<td>$19.53</td>
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2016 Estimated Employment: 13,370
2026 Projected Employment: 14,350
Average Total Openings: 1,070
Annual Growth Rate: 0.71%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Charge Nurse
Clinic Licensed Practical Nurse (CLINIC LPN)
Clinic Nurse
Licensed Practical Nurse (LPN)
Licensed Practical Nurse, Clinic Nurse (LPN, Clinic Nurse)
Licensed Vocational Nurse (LVN)
Office Nurse
Pediatric Licensed Practical Nurse (PEDIATRIC LPN)
Private Duty Nurse
Triage Licensed Practical Nurse (TRIAGE LPN)

Post-Secondary Institutions with Programs
Bevill State Community College
Bishop State Community College
Central Alabama Community College
Chattahoochee Valley Community College
Gadsden State Community College
George C Wallace Community College-Dothan
George C Wallace State Community College-Hanceville
George C Wallace State Community College-Selma
H Councill Trenholm State Community College
Herzing University-Birmingham
J F Drake State Community and Technical College
James H Faulkner State Community College
John C Calhoun State Community College
Lawson State Community College-Birmingham Campus
Lurleen B Wallace Community College
Northeast Alabama Community College
Northwest-Shoals Community College
Reid State Technical College
Shelton State Community College
Southern Union State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
53-3033  Light Truck or Delivery Services Drivers

Drive a light vehicle, such as a truck or van, with a capacity of less than 26,000 pounds Gross Vehicle Weight (GVW), primarily to deliver or pick up merchandise or to deliver packages. May load and unload vehicle.

Education:  These occupations typically require a high school diploma.

OJT:  Employees in these occupations usually need to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks:  Inspect and maintain vehicle supplies and equipment, such as gas, oil, water, tires, lights, or brakes, to ensure that vehicles are in proper working condition. Obey traffic laws and follow established traffic and transportation procedures. Maintain records, such as vehicle logs, records of cargo, or billing statements, in accordance with regulations. Drive vehicles with capacities under three tons to transport materials to and from specified destinations, such as railroad stations, plants, residences, offices, or within industrial yards. Load and unload trucks, vans, or automobiles. Turn in receipts and money received from deliveries. Verify the contents of inventory loads against shipping papers. Sell products from truck inventory and keep records of sales. Read maps and follow written or verbal geographic directions. Report delays, accidents, or other traffic and transportation situations to bases or other vehicles, using telephones or mobile two-way radios. Use and maintain the tools or equipment found on commercial vehicles, such as weighing or measuring devices. Report any mechanical problems encountered with vehicles. Present bills and receipts and collect payments for goods delivered or loaded. Perform emergency repairs, such as changing tires or installing light bulbs, fuses, tire chains, or spark plugs.

License:  License Not Required.

Outlook:  Satisfactory

Alabama Employment Outlook

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<td>2016 Estimated Employment:</td>
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<td>Hourly Wage</td>
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<tr>
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<td>Average Total Openings:</td>
</tr>
<tr>
<td></td>
<td>Annual Growth Rate:</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Bulk Delivery Driver
Delivery Driver
Driver
Driver/Merchandiser
Package Car Driver
Package Delivery Driver
Route Driver
Route Supervisor
Service Provider
Truck Driver

Post-Secondary Institutions with Programs
Bevill State Community College
Bishop State Community College
H Councill Trenholm State Technical College
John C Calhoun State Community College
Reid State Technical College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
43-4131 Loan Interviewers and Clerks

Interview loan applicants to elicit information; investigate applicants' backgrounds and verify references; prepare loan request papers; and forward findings, reports, and documents to appraisal department. Review loan papers to ensure completeness, and complete transactions between loan establishment, borrowers, and sellers upon approval of loan.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Check value of customer collateral to be held as loan security. Verify and examine information and accuracy of loan application and closing documents. Contact credit bureaus, employers, and other sources to check applicants' credit and personal references. Record applications for loan and credit, loan information, and disbursements of funds, using computers. Contact customers by mail, telephone, or in person concerning acceptance or rejection of applications. Answer questions and advise customers regarding loans and transactions. File and maintain loan records. Interview loan applicants to obtain personal and financial data and to assist in completing applications. Submit loan applications with recommendation for underwriting approval. Assemble and compile documents for loan closings, such as title abstracts, insurance forms, loan forms, and tax receipts. Review customer accounts to determine whether payments are made on time and that other loan terms are being followed. Present loan and repayment schedules to customers. Order property insurance or mortgage insurance policies to ensure protection against loss on mortgaged property. Accept payment on accounts. Prepare and type loan applications, closing documents, legal documents, letters, forms, government notices, and checks, using computers. Calculate, review, and correct errors on interest, principal, payment, and closing costs, using computers or calculators. Schedule and conduct closings of mortgage transactions. Establish credit limits and grant extensions of credit on overdue accounts.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
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<td>$32,640</td>
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<td></td>
<td>$37,620</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Closer
- Licensed Loan Officer Assistant
- Loan Analyst
- Loan Clerk
- Loan Closer
- Loan Originator
- Loan Processor
- Mortgage Broker
- Mortgage Loan Processor
- Mortgage Processor

Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
13-2072  Loan Officers
Evaluate, authorize, or recommend approval of commercial, real estate, or credit loans. Advise borrowers on financial status and payment methods. Includes mortgage loan officers and agents, collection analysts, loan servicing officers, and loan underwriters.

Education: Most of these occupations typically require a four-year bachelor’s degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Analyze applicants’ financial status, credit, and property evaluations to determine feasibility of granting loans. Supervise loan personnel. Stay abreast of new types of loans and other financial services and products to better meet customers’ needs. Confer with underwriters to aid in resolving mortgage application problems. Approve loans within specified limits, and refer loan applications outside those limits to management for approval. Work with clients to identify their financial goals and to find ways of reaching those goals. Review and update credit and loan files. Submit applications to credit analysts for verification and recommendation. Obtain and compile copies of loan applicants’ credit histories, corporate financial statements, and other financial information. Explain to customers the different types of loans and credit options that are available, as well as the terms of those services. Market bank products to individuals and firms, promoting bank services that may meet customers’ needs. Meet with applicants to obtain information for loan applications and to answer questions about the process. Compute payment schedules. Prepare reports to send to customers whose accounts are delinquent, and forward irreconcilable accounts for collector action. Review loan agreements to ensure that they are complete and accurate according to policy. Analyze potential loan markets and develop referral networks to locate prospects for loans. Set credit policies, credit lines, procedures and standards in conjunction with senior managers. Handle customer complaints and take appropriate action to resolve them. Negotiate payment arrangements with customers who have delinquent loans. Provide special services such as investment banking for clients with more specialized needs. Interview, hire, and train new employees. Arrange for maintenance and liquidation of delinquent properties. Petition courts to transfer titles and deeds of collateral to banks.

License: License Not Required.

Outlook: Satisfactory

### Alabama Employment Outlook

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<td>$33.31</td>
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<tr>
<td>$41.21</td>
<td>$85,720</td>
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</table>

| 2016 Estimated Employment: | 3,780 |
| 2026 Projected Employment: | 4,170 |
| Average Total Openings:    | 355   |
| Annual Growth Rate:        | 0.99% |

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Branch Manager
- Business Banking Officer
- Commercial Banker
- Commercial Loan Officer
- Corporate Banking Officer
- Loan Officer
- Mortgage Loan Officer
- Mortgage Loan Originator
- Portfolio Manager
- Relationship Manager

**Post-Secondary Institutions with Programs**
- Oakwood University
- Samford University
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of Montevallo
- University of North Alabama
- University of South Alabama
- University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Lodging Managers
Plan, direct, or coordinate activities of an organization or department that provides lodging and other accommodations.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

**Tasks:**
- Monitor the revenue activity of the hotel or facility. Show, rent, or assign accommodations. Manage and maintain temporary or permanent lodging facilities. Participate in financial activities, such as the setting of room rates, the establishment of budgets, and the allocation of funds to departments. Prepare required paperwork pertaining to departmental functions. Assign duties to workers, and schedule shifts. Train staff members. Answer inquiries pertaining to hotel policies and services, and resolve occupants' complaints. Confer and cooperate with other managers to ensure coordination of hotel activities. Receive and process advance registration payments, mail letters of confirmation, or return checks when registrations cannot be accepted. Purchase supplies, and arrange for outside services, such as deliveries, laundry, maintenance and repair, and trash collection. Greet and register guests. Collect payments and record data pertaining to funds and expenditures. Provide assistance to staff members by inspecting rooms, setting tables, or doing laundry. Arrange telephone answering services, deliver mail and packages, or answer questions regarding locations for eating and entertainment. Observe and monitor staff performance to ensure efficient operations and adherence to facility's policies and procedures. Meet with clients to schedule and plan details of conventions, banquets, receptions and other functions. Develop and implement policies and procedures for the operation of a department or establishment. Inspect guest rooms, public areas, and grounds for cleanliness and appearance. Coordinate front-office activities of hotels or motels, and resolve problems. Perform marketing and public relations activities. Organize and coordinate the work of staff and convention personnel for meetings to be held at a particular facility. Book tickets for guests for local tours and attractions. Interview and hire applicants.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<td>$26.15</td>
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<td>$30.94</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
Bed and Breakfast Innkeeper
Front Desk Manager
Front Office Director
Front Office Manager
Guest Relations Manager
Guest Service Manager
Hotel Manager
Night Manager
Resort Manager
Rooms Director

### Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
13-1081 Logisticians

Analyze and coordinate the logistical functions of a firm or organization. Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Direct team activities, establishing task priorities, scheduling and tracking work assignments, providing guidance, and ensuring the availability of resources. Protect and control proprietary materials. Manage the logistical aspects of product life cycles, including coordination or provisioning of samples, and the minimization of obsolescence. Maintain and develop positive business relationships with a customer's key personnel involved in, or directly relevant to, a logistics activity. Manage subcontractor activities, reviewing proposals, developing performance specifications, and serving as liaisons between subcontractors and organizations. Redesign the movement of goods to maximize value and minimize costs. Develop and implement technical project management tools, such as plans, schedules, and responsibility and compliance matrices. Perform managerial duties such as hiring and training employees and overseeing facility needs or requirements. Develop proposals that include documentation for estimates. Explain proposed solutions to customers, management, or other interested parties through written proposals and oral presentations. Collaborate with other departments as necessary to meet customer requirements, to take advantage of sales opportunities or, in the case of shortages, to minimize negative impacts on a business. Develop an understanding of customers' needs and take actions to ensure that such needs are met. Provide project management services, including the provision and analysis of technical data. Direct availability and allocation of materials, supplies, and finished products. Review logistics performance with customers against targets, benchmarks, and service agreements. Participate in the assessment and review of design alternatives and design change proposal impacts. Direct and support the compilation and analysis of technical source data necessary for product development. Report project plans, progress, and results. Stay informed of logistics technology advances and apply appropriate technology to improve logistics processes. Plan, organize, and execute logistics support activities, such as maintenance planning, repair analysis, and test equipment recommendations. Support the development of training materials and technical manuals. Perform system lifecycle cost analysis and develop component studies.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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<th>2026 Projected Employment:</th>
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<th>Annual Growth Rate:</th>
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<td>$42.52</td>
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<td>$49.39</td>
<td>$102,730</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Client Services Administrator
Logistician
Logistics Director
Logistics Team Lead
Logistics Vice President
Operations Vice President
Production Planner
Program Manager
Supervisory Supply Management Specialist
Supportability Engineer

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Machine Feeders and Offbearers
Feed materials into or remove materials from machines or equipment that is automatic or tended by other workers.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Inspect materials and products for defects, and to ensure conformance to specifications. Fasten, package, or stack materials and products, using hand tools and fastening equipment. Clean and maintain machinery, equipment, and work areas to ensure proper functioning and safe working conditions. Identify and mark materials, products, and samples, following instructions. Weigh or measure materials or products to ensure conformance to specifications. Record production and operational data, such as amount of materials processed. Remove materials and products from machines and equipment, and place them in boxes, trucks or conveyors, using hand tools and moving devices. Transfer materials and products to and from machinery and equipment, using industrial trucks or hand trucks. Shovel or scoop materials into containers, machines, or equipment for processing, storage, or transport. Load materials and products into machines and equipment, or onto conveyors, using hand tools and moving devices. Open and close gates of belt and pneumatic conveyors on machines that are fed directly from preceding machines. Push dual control buttons and move controls to start, stop, or adjust machinery and equipment. Add chemicals, solutions, or ingredients to machines or equipment as required by the manufacturing process.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>Experienced</td>
<td>$16.76</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cotton Tipper
Dryer Feeder
Feeder
Line Operator
Lug Loader
Machine Feeder
Offbearer
Sawmill Worker
Sewing Line Baler
Tube Puller

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
51-4041  Machinists
Set up and operate a variety of machine tools to produce precision parts and instruments. Includes precision instrument makers who fabricate, modify, or repair mechanical instruments. May also fabricate and modify parts to make or repair machine tools or maintain industrial machines, applying knowledge of mechanics, mathematics, metal properties, layout, and machining procedures.

Education:  Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
OJT:  Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.
Tasks:  Machine parts to specifications, using machine tools, such as lathes, milling machines, shapers, or grinders. Calculate dimensions or tolerances, using instruments such as micrometers or vernier calipers. Separate scrap waste and related materials for reuse, recycling, or disposal. Maintain machine tools in proper operational condition. Dispose of scrap or waste material in accordance with company policies and environmental regulations. Check work pieces to ensure that they are properly lubricated or cooled. Monitor the feed and speed of machines during the machining process. Confer with engineering, supervisory, or manufacturing personnel to exchange technical information. Set up or operate metalworking, brazing, heat-treating, welding, or cutting equipment. Lay out, measure, and mark metal stock to display placement of cuts. Align and secure holding fixtures, cutting tools, attachments, accessories, or materials onto machines. Operate equipment to verify operational efficiency. Set up, adjust, or operate basic or specialized machine tools used to perform precision machining operations. Measure, examine, or test completed units to check for defects and ensure conformance to specifications, using precision instruments, such as micrometers. Diagnose machine tool malfunctions to determine need for adjustments or repairs. Evaluate machining procedures and recommend changes or modifications for improved efficiency or adaptability. Study sample parts, blueprints, drawings, or engineering information to determine methods or sequences of operations needed to fabricate products. Fit and assemble parts to make or repair machine tools. Support metalworking projects from planning and fabrication through assembly, inspection, and testing, using knowledge of machine functions, metal properties and mathematics. Program computers or electronic instruments, such as numerically controlled machine tools. Confer with numerical control programmers to check and ensure that new programs or machinery will function properly and that output will meet specifications. Establish work procedures for fabricating new structural products, using a variety of metalworking machines. Design fixtures, tooling, or experimental parts to meet special engineering needs. Advise clients about the materials being used for finished products.
License:  License Not Required.
Outlook:  Good

Alabama Employment Outlook

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<td>Experienced</td>
<td>$23.85</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Gear Machinist
- Journeyman Machinist
- Machine Operator
- Machine Repair Person
- Machinist
- Maintenance Machinist
- Maintenance Specialist
- Production Machinist
- Set-Up Machinist
- Tool Room Machinist

Post-Secondary Institutions with Programs
- Central Alabama Community College
- H Councill Trenholm State Technical College
- Northwest-Shoals Community College - Muscle Shoals
- Southern Union State Community College
- Wallace State Community College - Hanceville

2018 Career Exploration Guide
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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-2035 Magnetic Resonance Imaging Technologists

Operate Magnetic Resonance Imaging (MRI) scanners. Monitor patient safety and comfort, and view images of area being scanned to ensure quality of pictures. May administer gadolinium contrast dosage intravenously. May interview patient, explain MRI procedures, and position patient on examining table. May enter into the computer data such as patient history, anatomical area to be scanned, orientation specified, and position of entry.

**Education:**
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:**
Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
Operate Magnetic Resonance Imaging (MRI) scanners. Conduct screening interviews of patients to identify contraindications, such as ferrous objects, pregnancy, prosthetic heart valves, cardiac pacemakers, or tattoos. Provide headphones or earplugs to patients to improve comfort and reduce unpleasant noise. Explain magnetic resonance imaging (MRI) procedures to patients, patient representatives, or family members. Calibrate magnetic resonance imaging (MRI) console or peripheral hardware. Select appropriate imaging techniques or coils to produce required images. Inject intravenously contrast dyes, such as gadolinium contrast, in accordance with scope of practice. Position patients on cradle, attaching immobilization devices if needed, to ensure appropriate placement for imaging. Place and secure small, portable magnetic resonance imaging (MRI) scanners on body part to be imaged, such as arm, leg, or head. Test magnetic resonance imaging (MRI) equipment to ensure proper functioning and performance in accordance with specifications. Take brief medical histories from patients. Create backup copies of images by transferring images from disk to storage media or workstation. Request sedatives or other medication from physicians for patients with anxiety or claustrophobia. Inspect images for quality, using magnetic resonance scanner equipment and laser camera. Write reports or notes to summarize testing procedures or outcomes for physicians or other medical professionals. Attach physiological monitoring leads to patient’s finger, chest, waist, or other body parts. Conduct inventories to maintain stock of clinical supplies. Instruct medical staff or students in magnetic resonance imaging (MRI) procedures or equipment operation. Develop or otherwise produce film records of magnetic resonance images. Troubleshoot technical issues related to magnetic resonance imaging (MRI) scanner or peripheral equipment, such as monitors or coils.

**License:**
License Not Required.

**Outlook:**
Good

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**Alabama Wage Data**

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<tr>
<th>Entry</th>
<th>Hourly Wage</th>
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<td>$31.61</td>
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**Alabama Projections**

2016 Estimated Employment: 540
2026 Projected Employment: 610
Average Total Openings: 35
Annual Growth Rate: 1.23%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
Chief Magnetic Resonance Imaging Technologist (Chief MRI Technologist)
Magnetic Resonance Imaging Coordinator (MRI Coordinator)
Magnetic Resonance Imaging Director
Magnetic Resonance Imaging Quality Assurance Coordinator (MRI Quality Assurance Coordinator)
Medical Imaging Director
MRI Specialist (Magnetic Resonance Imaging Specialist)
MRI Supervisor (Magnetic Resonance Imaging Supervisor)
MRI Technologist (Magnetic Resonance Imaging Technologist)
Staff Technologist
Technologist

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.
**Maids and Housekeeping Cleaners**

Perform any combination of light cleaning duties to maintain private households or commercial establishments, such as hotels and hospitals, in a clean and orderly manner. Duties may include making beds, replenishing linens, cleaning rooms and halls, and vacuuming.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Replenish supplies, such as drinking glasses, linens, writing supplies, and bathroom items. Sweep, scrub, wax, or polish floors, using brooms, mops, or powered scrubbing and waxing machines. Clean rooms, hallways, lobbies, lounges, restrooms, corridors, elevators, stairways, locker rooms, and other work areas so that health standards are met. Wash windows, walls, ceilings, and woodwork, waxing and polishing as necessary. Keep storage areas and carts well-stocked, clean, and tidy. Empty wastebaskets, empty and clean ashtrays, and transport other trash and waste to disposal areas. Observe precautions required to protect hotel and guest property and report damage, theft, and found articles to supervisors. Deliver television sets, ironing boards, baby cribs, and rollaway beds to guests' rooms. Wash dishes and clean kitchens, cooking utensils, and silverware. Polish silver accessories and metalwork, such as fixtures and fittings. Disinfect equipment and supplies, using germicides or steam-operated sterilizers. Dust and polish furniture and equipment. Remove debris from driveways, garages, and swimming pool areas. Plan menus and cook and serve meals and refreshments following employer's instructions or own methods. Clean rugs, carpets, upholstered furniture, and draperies, using vacuum cleaners and shampooers. Sort, count, and mark clean linens and store them in linen closets. Request repair services and wait for repair workers to arrive. Carry linens, towels, toilet items, and cleaning supplies, using wheeled carts. Purchase or order groceries and household supplies to keep kitchens stocked and record expenditures. Sort clothing and other articles, load washing machines, and iron and fold dried items. Hang draperies and dust window blinds. Run errands, such as taking laundry to the cleaners and buying groceries. Replace light bulbs. Assign duties to other staff and give instructions regarding work methods and routines. Prepare rooms for meetings and arrange decorations, media equipment, and furniture for social or business functions. Answer telephones and doorbells. Care for children or elderly persons by overseeing their activities, providing companionship, and assisting them with dressing, bathing, eating, and other needs. Move and arrange furniture and turn mattresses.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>$17,380</td>
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<td>$19,330</td>
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<tr>
<td></td>
<td>$20,310</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Breakfast and Room Attendant
- Cottage Attendant
- Environmental Services Aide
- Environmental Services Worker
- Housekeeper
- Housekeeping
- Housekeeping Aide
- Housekeeping Laundry Worker
- Room Attendant
- Room Cleaner

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.

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2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-9071  Maintenance and Repair Workers, General

Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of an establishment in repair. Duties may involve pipe fitting; boiler making; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs.

Education:  These occupations typically require a high school diploma.

OJT:  Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks:  Perform general cleaning duties of buildings or properties. Repair machines, equipment, or structures, using tools such as hammers, hoists, saws, drills, wrenches, or equipment such as precision measuring instruments or electrical or electronic testing devices. Paint or repair roofs, windows, doors, floors, Woodward, plaster, drywall, or other parts of building structures. Inspect, operate, or test machinery or equipment to diagnose machine malfunctions. Test and treat water supply. Perform routine maintenance, such as inspecting drives, motors, or belts, checking fluid levels, replacing filters, or doing other preventive maintenance actions. Diagnose mechanical problems and determine how to correct them, checking blueprints, repair manuals, or parts catalogs, as necessary. Maintain or repair specialized equipment or machinery located in cafeterias, laundries, hospitals, stores, offices, or factories. Adjust functional parts of devices or control instruments, using hand tools, levels, plumb bobs, or straightedges. Install equipment to improve the energy or operational efficiency of residential or commercial buildings. Dismantle machines, equipment, or devices to access and remove defective parts, using hoists, cranes, hand tools, or power tools. Assemble, install, or repair wiring, electrical or electronic components, pipe systems, plumbing, machinery, or equipment. Order parts, supplies, or equipment from catalogs or suppliers. Set up and operate machine tools to repair or fabricate machine parts, jigs, fixtures, or tools. Provide groundskeeping services, such as landscaping or snow removal. Fabricate or repair counters, benches, partitions, or other wooden structures, such as sheds or outbuildings. Record type and cost of maintenance or repair work. Assemble boilers at installation sites, using tools such as levels, plumb bobs, hammers, torches, or other hand tools. Train or manage maintenance personnel or subcontractors. Plan and lay out repair work, using diagrams, drawings, blueprints, maintenance manuals, or schematic diagrams. Estimate costs to repair machinery, equipment, or building structures. Clean or lubricate shafts, bearings, gears, or other parts of machinery. Inspect used parts to determine changes in dimensional requirements, using rules, calipers, micrometers, or other measuring instruments. Design new equipment to aid in the repair or maintenance of machines, mechanical equipment, or building structures. Grind and reseat valves, using valve-grinding machines. Align and balance new equipment after installation. Operate cutting torches or welding equipment to cut or join metal parts. Position, attach, or blow insulating materials to prevent energy losses from buildings, pipes, or other structures or objects.

License:  License Not Required.

Outlook:  Satisfactory

Alabama Employment Outlook

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<th></th>
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<th>Alabama Projections</th>
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<tr>
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<td>$21.38</td>
<td>$44,470</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Building Maintenance Mechanic
Building Mechanic
Equipment Engineering Technician
Facilities Manager
Maintenance Engineer
Maintenance Man
Maintenance Mechanic
Maintenance Supervisor
Maintenance Technician
Maintenance Worker

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-9043  Maintenance Workers, Machinery
Lubricate machinery, change parts, or perform other routine machinery maintenance.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Read work orders and specifications to determine machines and equipment requiring repair or maintenance. Record production, repair, and machine maintenance information. Collect and discard worn machine parts and other refuse to maintain machinery and work areas. Lubricate or apply adhesives or other materials to machines, machine parts, or other equipment, according to specified procedures. Start machines and observe mechanical operation to determine efficiency and to detect problems. Set up and operate machines, and adjust controls to regulate operations. Install, replace, or change machine parts and attachments, according to production specifications. Inspect or test damaged machine parts, and mark defective areas or advise supervisors of repair needs. Clean machines and machine parts, using cleaning solvents, cloths, air guns, hoses, vacuums, or other equipment. Reassemble machines after the completion of repair or maintenance work. Collaborate with other workers to repair or move machines, machine parts, or equipment. Remove hardened material from machines or machine parts, using abrasives, power and hand tools, jackhammers, sledgehammers, or other equipment. Inventory and requisition machine parts, equipment, and other supplies so that stock can be maintained and replenished. Dismantle machines and remove parts for repair, using hand tools, chain falls, jacks, cranes, or hoists. Replace or repair metal, wood, leather, glass, or other lining in machines, or in equipment compartments or containers. Replace, empty, or replenish machine and equipment containers such as gas tanks or boxes. Transport machine parts, tools, equipment, and other material between work areas and storage, using cranes, hoists, or dollies. Measure, mix, prepare, and test chemical solutions used to clean or repair machinery and equipment.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<td>2026 Projected Employment: 990</td>
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<td>$20.85 Experienced</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Lubricator
Machine Repairer
Maintainer
Maintenance Electrician
Maintenance Man
Maintenance Mechanic
Maintenance Technician
Maintenance Worker
Oiler
Overhauler

Post-Secondary Institutions with Programs
John C Calhoun State Community College
Lawson State Community College - Birmingham
Northeast Alabama Community College
Northwest-Shoals Community College - Muscle Shoals
Shelton State Community College
Southern Union State Community College
University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
13-1111 Management Analysts

Conduct organizational studies and evaluations, design systems and procedures, conduct work simplification and measurement studies, and prepare operations and procedures manuals to assist management in operating more efficiently and effectively. Includes program analysts and management consultants.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Confer with personnel concerned to ensure successful functioning of newly implemented systems or procedures. Gather and organize information on problems or procedures. Interview personnel and conduct on-site observation to ascertain unit functions, work performed, and methods, equipment, and personnel used. Analyze data gathered and develop solutions or alternative methods of proceeding. Plan study of work problems and procedures, such as organizational change, communications, information flow, integrated production methods, inventory control, or cost analysis. Design, evaluate, recommend, and approve changes of forms and reports. Document findings of study and prepare recommendations for implementation of new systems, procedures, or organizational changes. Review forms and reports and confer with management and users about format, distribution, and purpose, identifying problems and improvements. Develop and implement records management program for filing, protection, and retrieval of records, and assure compliance with program. Prepare manuals and train workers in use of new forms, reports, procedures or equipment, according to organizational policy. Recommend purchase of storage equipment and design area layout to locate equipment in space available.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>$55.67</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Administrative Analyst
- Business Analyst
- Employment Programs Analyst
- Leadership Development Manager
- Management Analyst
- Management Consultant
- Organizational Development Consultant
- Principal Consultant
- Program Management Analyst
- Quality Control Analyst

### Post-Secondary Institutions with Programs
- Amridge University
- Auburn University at Montgomery
- Columbia Southern University
- Concordia College Alabama
- Samford University
- South University-Montgomery
- Spring Hill College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Market Research Analysts and Marketing Specialists

Research market conditions in local, regional, or national areas, or gather information to determine potential sales of a product or service, or create a marketing campaign. May gather information on competitors, prices, sales, and methods of marketing and distribution.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Collect and analyze data on customer demographics, preferences, needs, and buying habits to identify potential markets and factors affecting product demand. Prepare reports of findings, illustrating data graphically and translating complex findings into written text. Monitor industry statistics and follow trends in trade literature. Conduct research on consumer opinions and marketing strategies, collaborating with marketing professionals, statisticians, pollsters, and other professionals. Devise and evaluate methods and procedures for collecting data, such as surveys, opinion polls, or questionnaires, or arrange to obtain existing data. Measure the effectiveness of marketing, advertising, and communications programs and strategies. Measure and assess customer and employee satisfaction. Forecast and track marketing and sales trends, analyzing collected data. Gather data on competitors and analyze their prices, sales, and method of marketing and distribution. Seek and provide information to help companies determine their position in the marketplace. Attend staff conferences to provide management with information and proposals concerning the promotion, distribution, design, and pricing of company products or services. Direct trained survey interviewers. Develop and implement procedures for identifying advertising needs.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<td>Entry</td>
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<td>$34.54</td>
<td>$71,840</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Business Development Specialist
Client Service and Consulting Manager
Communications Specialist
Demographic Analyst
Market Analyst
Market Research Analyst
Market Research Consultant
Market Research Specialist
Market Researcher
Marketing Research Coordinator

Post-Secondary Institutions with Programs

Alabama A & M University
Alabama State University
Auburn University
Auburn University - Montgomery
Columbia Southern University
Jacksonville State University
Oakwood University
Samford University
Talladega College
The University of Alabama
Tuskegee University
University of Alabama - Birmingham
University of Alabama - Huntsville
University of Montevallo
University of North Alabama
University of South Alabama
University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
11-2021 Marketing Managers

Plan, direct, or coordinate marketing policies and programs, such as determining the demand for products and services offered by a firm and its competitors, and identify potential customers. Develop pricing strategies with the goal of maximizing the firm's profits or share of the market while ensuring the firm's customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Identify, develop, or evaluate marketing strategy, based on knowledge of establishment objectives, market characteristics, and cost and markup factors. Compile lists describing product or service offerings. Formulate, direct, or coordinate marketing activities or policies to promote products or services, working with advertising or promotion managers. Coordinate or participate in promotional activities or trade shows, working with developers, advertisers, or production managers, to market products or services. Consult with product development personnel on product specifications such as design, color, or packaging. Develop pricing strategies, balancing firm objectives and customer satisfaction. Direct the hiring, training, or performance evaluations of marketing or sales staff and oversee their daily activities. Evaluate the financial aspects of product development, such as budgets, expenditures, research and development appropriations, or return-on-investment and profit-loss projections. Use sales forecasting or strategic planning to ensure the sale and profitability of products, lines, or services, analyzing business developments and monitoring market trends. Initiate market research studies or analyze their findings. Develop business cases for environmental marketing strategies. Consult with buying personnel to gain advice regarding the types of products or services expected to be in demand. Consult with buying personnel to gain advice regarding environmentally sound or sustainable products. Negotiate contracts with vendors or distributors to manage product distribution, establishing distribution networks or developing distribution strategies. Select products or accessories to be displayed at trade or special production shows. Conduct economic or commercial surveys to identify potential markets for products or services. Confer with legal staff to resolve problems, such as copyright infringement or royalty sharing with outside producers or distributors. Integrate environmental information into product or company marketing strategies, policies, or activities. Advise business or other groups on local, national, or international factors affecting the buying or selling of products or services. Recommend modifications to products, packaging, production processes, or other characteristics to improve the environmental soundness or sustainability of products.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
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<tr>
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<td>$59.34</td>
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<tr>
<td>Experienced</td>
<td>$73.32</td>
</tr>
</tbody>
</table>

**Average Total Openings:** 55

**Annual Growth Rate:** 0.82%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Account Supervisor
- Brand Manager
- Business Development Director
- Business Development Manager
- Commercial Lines Manager
- Market Development Executive
- Marketing Coordinator
- Marketing Director
- Marketing Manager
- Product Manager

### Post-Secondary Institutions with Programs
- Auburn University
- Troy University

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
21-1013  Marriage and Family Therapists

Diagnose and treat mental and emotional disorders, whether cognitive, affective, or behavioral, within the context of marriage and family systems. Apply psychotherapeutic and family systems theories and techniques in the delivery of services to individuals, couples, and families for the purpose of treating such diagnosed nervous and mental disorders.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Ask questions that will help clients identify their feelings and behaviors. Maintain case files that include activities, progress notes, evaluations, and recommendations. Counsel clients on concerns, such as unsatisfactory relationships, divorce and separation, child rearing, home management, or financial difficulties. Supervise other counselors, social service staff, and assistants. Collect information about clients, using techniques such as testing, interviewing, discussion, or observation. Encourage individuals and family members to develop and use skills and strategies for confronting their problems in a constructive manner. Confer with other counselors, doctors, and professionals to analyze individual cases and to coordinate counseling services. Provide instructions to clients on how to obtain help with legal, financial, and other personal issues. Gather information from doctors, schools, social workers, juvenile counselors, law enforcement personnel, and others to make recommendations to courts for resolution of child custody or visitation disputes. Develop and implement individualized treatment plans addressing family relationship problems, destructive patterns of behavior, and other personal issues. Determine whether clients should be counseled or referred to other specialists in such fields as medicine, psychiatry, or legal aid. Confer with clients to develop plans for posttreatment activities. Follow up on results of counseling programs and clients' adjustments to determine effectiveness of programs. Write evaluations of parents and children for use by courts deciding divorce and custody cases, testifying in court if necessary. Provide family counseling and treatment services to inmates participating in substance abuse programs. Provide public education and consultation to other professionals or groups regarding counseling services, issues, and methods.

License: MFT License Fee: $300.00 Examination Fee: $220.00 MFT Associate Initial License Fee: $200.00 MFT Associate Removal Fee: $200.00

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$12.83</td>
<td>Entry</td>
<td>$26,690</td>
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<tr>
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<td>$19.19</td>
<td>Average</td>
<td>$39,920</td>
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<tr>
<td>Experienced</td>
<td>$22.37</td>
<td>Experienced</td>
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<tr>
<td>Average Total Openings:</td>
<td>1.71%</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Advanced Clinical Specialist
- Clinical Services Director
- Clinical Therapist
- Clinician
- Counselor
- Family Therapist
- Licensed Marriage and Family Therapist (LMFT)
- Marriage and Family Therapist (MFT)
- Psychotherapist
- Therapist

Post-Secondary Institutions with Programs
- Amridge University
- University of Mobile

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
31-9011 Massage Therapists
Perform therapeutic massages of soft tissues and joints. May assist in the assessment of range of motion and muscle strength, or propose client therapy plans.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: None

Tasks: Massage and knead muscles and soft tissues of the body to provide treatment for medical conditions, injuries, or wellness maintenance. Apply finger and hand pressure to specific points of the body. Provide clients with guidance and information about techniques for postural improvement and stretching, strengthening, relaxation, and rehabilitative exercises. Maintain treatment records. Confer with clients about their medical histories and problems with stress or pain to determine how massage will be most helpful. Assess clients' soft tissue condition, joint quality and function, muscle strength, and range of motion. Perform other adjunctive therapies or treatment techniques in addition to massage. Prepare and blend oils and apply the blends to clients' skin. Treat clients in professional settings or travel to clients' offices and homes. Use complementary aids, such as infrared lamps, wet compresses, ice, and whirlpool baths to promote clients' recovery, relaxation, and well-being. Develop and propose client treatment plans that specify which types of massage are to be used. Refer clients to other types of therapists when necessary. Consult with other health care professionals, such as physiotherapists, chiropractors, physicians, and psychologists, to develop treatment plans for clients.

License: Initial License Fee: $100.00 (for first two years) Application Request Fee: $25.00 Establishment Fee: $100.00 License Renewal Fee: $100.00 Establishment Renewal Fee: $50.00

Outlook: Good

Alabama Employment Outlook

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
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<td>Entry</td>
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<tr>
<td>$9.62</td>
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<td><strong>Experienced</strong></td>
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<tr>
<td>$19.96</td>
<td>$41,520</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Bodywork Therapist
Certified Massage Therapist (CMT)
Clinical Massage Therapist
Integrated Deep Tissue Massage Therapist
Licensed Massage Practitioner (LMP)
Licensed Massage Therapist
Massage Therapist
Medical Massage Therapist
Registered Massage Therapist
Therapeutic Massage Technician

Post-Secondary Institutions with Programs
Blue Cliff Career College
Gadsden State Community College
George C Wallace State Community College-Hanceville
H Councill Trenholm State Community College
Lurleen B Wallace Community College
Northeast Alabama Community College
Southern Union State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
17-2131 Materials Engineers

Evaluate materials and develop machinery and processes to manufacture materials for use in products that must meet specialized design and performance specifications. Develop new uses for known materials. Includes those engineers working with composite materials or specializing in one type of material, such as graphite, metal and metal alloys, ceramics and glass, plastics and polymers, and naturally occurring materials. Includes metallurgists and metallurgical engineers, ceramic engineers, and welding engineers.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Supervise the work of technologists, technicians, and other engineers and scientists. Supervise production and testing processes in industrial settings, such as metal refining facilities, smelting or foundry operations, or nonmetallic materials production operations. Monitor material performance and evaluate material deterioration. Guide technical staff in developing materials for specific uses in projected products or devices. Analyze product failure data and laboratory test results to determine causes of problems and develop solutions. Plan and evaluate new projects, consulting with other engineers and corporate executives as necessary. Evaluate technical specifications and economic factors relating to process or product design objectives. Teach in colleges and universities. Conduct or supervise tests on raw materials or finished products to ensure their quality. Replicate the characteristics of materials and their components with computers. Perform managerial functions, such as preparing proposals and budgets, analyzing labor costs, and writing reports. Plan and implement laboratory operations to develop material and fabrication procedures that meet cost, product specification, and performance standards. Solve problems in a number of engineering fields, such as mechanical, chemical, electrical, civil, nuclear, and aerospace. Design and direct the testing or control of processing procedures. Modify properties of metal alloys, using thermal and mechanical treatments. Determine appropriate methods for fabricating and joining materials. Review new product plans and make recommendations for material selection, based on design objectives such as strength, weight, heat resistance, electrical conductivity, and cost. Conduit training sessions on new material products, applications, or manufacturing methods for customers and their employees. Write for technical magazines, journals, and trade association publications. Design processing plants and equipment.

License: License Not Required.

Outlook: Satisfactory

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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
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<tr>
<td>Experienced</td>
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<tr>
<td>Average</td>
<td>$47.43</td>
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<td>Experienced</td>
<td>$55.66</td>
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<td>Average</td>
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<td>$47.43</td>
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<tr>
<td>Experienced</td>
<td>$55.66</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Materials and Processes Manager
Materials Branch Chief
Materials Development Engineer
Materials Engineer
Materials Research Engineer
Metallurgical Engineer
Metallurgist
Process Engineer
Research Engineer
Test Engineer

Post-Secondary Institutions with Programs
Auburn University
The University of Alabama
University of Alabama - Birmingham

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Meat, Poultry, and Fish Cutters and Trimmers
Use hand or hand tools to perform routine cutting and trimming of meat, poultry, and seafood.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.

Tasks: Prepare ready-to-heat foods by filleting meat or fish or cutting it into bite-sized pieces, preparing and adding vegetables or applying sauces or breading. Separate meats and byproducts into specified containers and seal containers. Produce hamburger meat and meat trimmings. Inspect meat products for defects, bruises or blemishes and remove them along with any excess fat. Obtain and distribute specified meat or carcass. Clean and salt hides. Process primal parts into cuts that are ready for retail use. Prepare sausages, luncheon meats, hot dogs, and other fabricated meat products, using meat trimmings and hamburger meat. Use knives, cleavers, meat saws, bandsaws, or other equipment to perform meat cutting and trimming. Weigh meats and tag containers for weight and contents. Remove parts, such as skin, feathers, scales or bones, from carcass. Clean, trim, slice, and section carcasses for future processing. Cut and trim meat to prepare for packing.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$9.25</td>
<td>$19,240</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>$10.82</td>
<td>$22,500</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$11.60</td>
<td></td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Beef Trimmer
Breast Trimmer
Chicken Cutter
Deboner
Fish Processor
Meat Cutter
Meat Trimmer
Seafood Processor
Trimmer
Wing Scorer

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
**17-3013 Mechanical Drafters**

Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Develop detailed design drawings and specifications for mechanical equipment, dies, tools, and controls, using computer-assisted drafting (CAD) equipment. Produce three-dimensional models, using computer-aided design (CAD) software. Design scale or full-size blueprints of specialty items such as furniture and automobile body or chassis components. Draw freehand sketches of designs, trace finished drawings onto designated paper for the reproduction of blueprints, and reproduce working drawings on copy machines. Compute mathematical formulas to develop and design detailed specifications for components or machinery, using computer-aided equipment. Position instructions and comments onto drawings. Review and analyze specifications, sketches, drawings, ideas, and related data to assess factors affecting component designs and the procedures and instructions to be followed. Modify and revise designs to correct operating deficiencies or to reduce production problems. Lay out and draw schematic, orthographic, or angle views to depict functional relationships of components, assemblies, systems, and machines. Check dimensions of materials to be used and assign numbers to the materials. Coordinate with and consult other workers to design, lay out, or detail components and systems and to resolve design or other problems. Lay out, draw, and reproduce illustrations for reference manuals and technical publications to describe operation and maintenance of mechanical systems. Shade or color drawings to clarify and emphasize details and dimensions or eliminate background using ink, crayon, airbrush, and overlays. Supervise and train other drafters, technologists, and technicians. Confer with customer representatives to review schematics and answer questions pertaining to installation of systems.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<thead>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
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<tr>
<td><strong>Entry</strong></td>
<td>$17.47</td>
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<tr>
<td><strong>Average</strong></td>
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<tr>
<td><strong>Experienced</strong></td>
<td>$33.58</td>
</tr>
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</table>

**2026 Projected Employment:** 700

**Annual Total Openings:** 65

**Annual Growth Rate:** 1.39%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- CAD Designer (Computer Aided Design Designer)
- CAD Operator (Computer Aided Design Operator)
- Design Drafter
- Designer
- Drafter
- Drafting Technician
- Mechanical Designer
- Mechanical Drafter
- Product Designer
- Project Designer

**Post-Secondary Institutions with Programs**
- Bevill State Community College
- Bishop State Community College
- Central Alabama Community College
- Gadsden State Community College
- George C Wallace Community College - Dothan
- George C Wallace Community College - Selma
- H Councill Trenholm State Technical College
- J F Drake State Community and Technical College
- J F Ingram State Technical College
- John C Calhoun State Community College
- Lawson State Community College - Birmingham
- Lurleen B Wallace Community College
- Northeast Alabama Community College
- Northwest-Shoals Community College - Muscle Shoals
- Remington College
- Shelton State Community College
- Southern Union State Community College
- Wallace State Community College - Hanceville

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Mechanical Engineering Technicians

Apply theory and principles of mechanical engineering to modify, develop, test, or calibrate machinery and equipment under direction of engineering staff or physical scientists.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate’s degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Review project instructions and blueprints to ascertain test specifications, procedures, and objectives, and test nature of technical problems such as redesign. Discuss changes in design, method of manufacture and assembly, and drafting techniques and procedures with staff and coordinate corrections. Confer with technicians and submit reports of test results to engineering department and recommend design or material changes. Record test procedures and results, numerical and graphical data, and recommendations for changes in product or test methods. Draft detail drawing or sketch for drafting room completion or to request parts fabrication by machine, sheet or wood shops. Calculate required capacities for equipment of proposed system to obtain specified performance and submit data to engineering personnel for approval. Devise, fabricate, and assemble new or modified mechanical components for products such as industrial machinery or equipment, and measuring instruments. Read dials and meters to determine amperage, voltage, electrical output and input at specific operating temperature to analyze parts performance. Operate drill press, grinders, engine lathe, or other machines to modify parts tested or to fabricate experimental parts for testing. Review project instructions and specifications to identify, modify and plan requirements fabrication, assembly and testing. Set up prototype and test apparatus and operate test controlling equipment to observe and record prototype test results. Set up and conduct tests of complete units and components under operational conditions to investigate proposals for improving equipment performance. Inspect lines and figures for clarity and return erroneous drawings to designer for correction. Prepare parts sketches and write work orders and purchase requests to be furnished by outside contractors. Evaluate tool drawing designs by measuring drawing dimensions and comparing with original specifications for form and function using engineering skills. Test equipment, using test devices attached to generator, voltage regulator, or other electrical parts, such as generators or spark plugs. Estimate cost factors including labor and material for purchased and fabricated parts and costs for assembly, testing, or installing. Analyze test results in relation to design or rated specifications and test objectives, and modify or adjust equipment to meet specifications.

License: License Not Required.

Outlook: Good

### Alabama Employment Outlook

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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$17.95</td>
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<tr>
<td>$31.55</td>
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</tr>
</tbody>
</table>

**2016 Estimated Employment:** 740

**2026 Projected Employment:** 870

**Average Total Openings:** 80

**Annual Growth Rate:** 1.63%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Designer
- Engineering Lab Technician
- Engineering Technical Analyst
- Laboratory Technician
- Maintenance Technician
- Mechanical Designer
- Mechanical Technician
- Process Engineering Technician
- Process Technician
- Research and Development Technician

### Post-Secondary Institutions with Programs

- Alabama A & M University

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
17-2141 Mechanical Engineers

Perform engineering duties in planning and designing tools, engines, machines, and other mechanically functioning equipment. Oversee installation, operation, maintenance, and repair of equipment such as centralized heat, gas, water, and steam systems.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Confer with engineers or other personnel to implement operating procedures, resolve system malfunctions, or provide technical information. Perform personnel functions, such as supervision of production workers, technicians, technologists, or other engineers. Design integrated mechanical or alternative systems, such as mechanical cooling systems with natural ventilation systems, to improve energy efficiency. Research, design, evaluate, install, operate, or maintain mechanical products, equipment, systems or processes to meet requirements. Read and interpret blueprints, technical drawings, schematics, or computer-generated reports. Recommend design modifications to eliminate machine or system malfunctions. Specify system components or direct modification of products to ensure conformance with engineering design, performance specifications, or environmental regulations. Recommend the use of utility or energy services that minimize carbon footprints. Conduct research that tests or analyzes the feasibility, design, operation, or performance of equipment, components, or systems. Develop, coordinate, or monitor all aspects of production, including selection of manufacturing methods, fabrication, or operation of product designs. Estimate costs or submit bids for engineering, construction, or extraction projects. Develop or test models of alternate designs or processing methods to assess feasibility, sustainability, operating condition effects, potential new applications, or necessity of modification. Provide technical customer service. Oversee installation, operation, maintenance, or repair to ensure that machines or equipment are installed and functioning according to specifications. Evaluate mechanical designs or prototypes for energy performance or environmental impact. Research and analyze customer design proposals, specifications, manuals, or other data to evaluate the feasibility, cost, or maintenance requirements of designs or applications. Assist drafters in developing the structural design of products, using drafting tools or computer-assisted drafting equipment or software. Investigate equipment failures or difficulties to diagnose faulty operation and recommend remedial actions. Apply engineering principles or practices to emerging fields, such as robotics, waste management, or biomedical engineering. Write performance requirements for product development or engineering projects. Solicit new business. Provide feedback to design engineers on customer problems or needs. Study industrial processes to maximize the efficiency of equipment applications, including equipment placement.

License: License Not Required.

Outlook: Good

### Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$29.60</td>
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<tr>
<td>$43.27</td>
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<tr>
<td><strong>Experienced</strong></td>
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</tr>
<tr>
<td>$50.10</td>
<td>$104,200</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Application Engineer
- Design Engineer
- Design Maintenance Engineer
- Equipment Engineer
- Mechanical Design Engineer
- Mechanical Engineer
- Process Engineer
- Product Engineer
- Project Engineer
- Test Engineer

**Post-Secondary Institutions with Programs**
- Alabama A & M University
- Auburn University
- The University of Alabama
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of South Alabama

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Medical and Health Services Managers

Plan, direct, or coordinate medical and health services in hospitals, clinics, managed care organizations, public health agencies, or similar organizations.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Direct, supervise and evaluate work activities of medical, nursing, technical, clerical, service, maintenance, and other personnel. Establish work schedules and assignments for staff, according to workload, space and equipment availability. Develop and maintain computerized record management systems to store and process data, such as personnel activities and information, and to produce reports. Prepare activity reports to inform management of the status and implementation plans of programs, services, and quality initiatives. Manage change in integrated health care delivery systems, such as work restructuring, technological innovations, and shifts in the focus of care. Consult with medical, business, and community groups to discuss service problems, respond to community needs, enhance public relations, coordinate activities and plans, and promote health programs. Plan, implement and administer programs and services in a health care or medical facility, including personnel administration, training, and coordination of medical, nursing and physical plant staff. Establish objectives and evaluative or operational criteria for units they manage. Monitor the use of diagnostic services, inpatient beds, facilities, and staff to ensure effective use of resources and assess the need for additional staff, equipment, and services. Conduct and administer fiscal operations, including accounting, planning budgets, authorizing expenditures, establishing rates for services, and coordinating financial reporting. Maintain awareness of advances in medicine, computerized diagnostic and treatment equipment, data processing technology, government regulations, health insurance changes, and financing options. Review and analyze facility activities and data to aid planning and cash and risk management and to improve service utilization. Develop or expand and implement medical programs or health services that promote research, rehabilitation, and community health. Maintain communication between governing boards, medical staff, and department heads by attending board meetings and coordinating interdepartmental functioning. Develop and implement organizational policies and procedures for the facility or medical unit. Inspect facilities and recommend building or equipment modifications to ensure emergency readiness and compliance to access, safety, and sanitation regulations. Direct or conduct recruitment, hiring, and training of personnel. Develop instructional materials and conduct in-service and community-based educational programs.

License: Application Fee: $150.00  License Issuance Fee: $150.00 Examination Fee: $350.00  Annual License Renewal Fee: $125.00

Outlook: Good

Alabama Employment Outlook

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<td>3,170</td>
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<tr>
<td></td>
<td>2026 Projected Employment:</td>
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<tr>
<td></td>
<td>3,660</td>
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<tr>
<td></td>
<td>Average Total Openings:</td>
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<tr>
<td></td>
<td>310</td>
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<tr>
<td></td>
<td>Annual Growth Rate:</td>
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<tr>
<td></td>
<td>1.45%</td>
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<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th></th>
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<tbody>
<tr>
<td>Entry</td>
<td>$30.79</td>
<td>Entry</td>
<td>$64,040</td>
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<tr>
<td>Average</td>
<td>$49.84</td>
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<tr>
<td>Experienced</td>
<td>$59.36</td>
<td>Experienced</td>
<td>$123,460</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Clinical Director
Health Information Management Corporate Director
Health Information Management Director
Health Manager
Mental Health Program Manager
Nurse Manager
Nursing Director
Office Manager
Practice Administrator
Program Manager

Post-Secondary Institutions with Programs
Alabama State University
Auburn University
Columbia Southern University
Herzing University-Birmingham
Oakwood University
Samford University
South University-Montgomery
The University of Alabama
Troy University
Tuskegee University
University of Alabama at Birmingham
University of Alabama in Huntsville
University of South Alabama

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Medical Assistants

Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Prepare treatment rooms for patient examinations, keeping the rooms neat and clean. Show patients to examination rooms and prepare them for the physician. Interview patients to obtain medical information and measure their vital signs, weight, and height. Record patients’ medical history, vital statistics, or information such as test results in medical records. Set up medical laboratory equipment. Greet and log in patients arriving at office or clinic. Clean and sterilize instruments and dispose of contaminated supplies. Perform general office duties, such as answering telephones, taking dictation, or completing insurance forms. Prepare and administer medications as directed by a physician. Explain treatment procedures, medications, diets, or physicians’ instructions to patients. Schedule appointments for patients. Operate x-ray, electrocardiogram (EKG), or other equipment to administer routine diagnostic tests. Authorize drug refills and provide prescription information to pharmacies. Keep financial records or perform other bookkeeping duties, such as handling credit or collections or mailing monthly statements to patients. Contact medical facilities or departments to schedule patients for tests or admission. Perform routine laboratory tests and sample analyses. Inventory and order medical, lab, or office supplies or equipment. Help physicians examine and treat patients, handing them instruments or materials or performing such tasks as giving injections or removing sutures. Collect blood, tissue, or other laboratory specimens, log the specimens, and prepare them for testing. Change dressings on wounds.

License: License Not Required.

Outlook: Very Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$10.24</td>
<td>$21,300</td>
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<td>Average</td>
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<tr>
<td>$13.33</td>
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<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$14.88</td>
<td>$30,950</td>
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| 2016 Estimated Employment: | 7,360 |
| 2026 Projected Employment: | 9,180 |
| Average Total Openings:    | 1,055 |
| Annual Growth Rate:        | 2.23% |

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Certified Medical Assistant (CMA)
Chiropractor Assistant
Clinical Assistant
Doctor's Assistant
Medical Assistant (MA)
Medical Office Assistant
Ophthalmic Technician
Optometric Assistant
Optometric Technician
Registered Medical Assistant (RMA)

Post-Secondary Institutions with Programs
Brown Mackie College-Birmingham
Chattahoochee Valley Community College
Fortis College
Fortis College-Dothan
Fortis College-Foley
Fortis College-Montgomery
Fortis Institute-Birmingham
George C Wallace Community College-Dothan
George C Wallace State Community College-Hanceville
H Councill Trenholm State Community College
J F Drake State Community and Technical College
Northeast Alabama Community College
Northwest-Shoals Community College
Remington College-Mobile Campus
Ross Medical Education Center-Huntsville
South University-Montgomery

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Medical Equipment Preparers**
Prepare, sterilize, install, or clean laboratory or healthcare equipment. May perform routine laboratory tasks and operate or inspect equipment.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Organize and assemble routine or specialty surgical instrument trays or other sterilized supplies, filling special requests as needed. Clean instruments to prepare them for sterilization. Start equipment and observe gauges and equipment operation to detect malfunctions and to ensure equipment is operating to prescribed standards. Deliver equipment to specified hospital locations or to patients’ residences. Maintain records of inventory or equipment usage and order medical instruments or supplies when inventory is low. Disinfect and sterilize equipment such as respirators, hospital beds, or oxygen or dialysis equipment, using sterilizers, aerators, or washers. Report defective equipment to appropriate supervisors or staff. Operate and maintain steam autoclaves, keeping records of loads completed, items in loads, and maintenance procedures performed. Stock crash carts or other medical supplies. Record sterilizer test results. Purge wastes from equipment by connecting equipment to water sources and flushing water through systems. Examine equipment to detect leaks, worn or loose parts, or other indications of disrepair. Check sterile supplies to ensure that they are not outdated. Install and set up medical equipment, using hand tools. Assist hospital staff with patient care duties, such as providing transportation or setting up traction. Attend hospital in-service programs related to areas of work specialization.

**License:**
License Fee: $250.00 Inspection Fee: $500.00 License Renewal Fee: $250.00 Re-Inspection Fee: $250.00

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$10.34</td>
<td>$21,510</td>
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<td>$13.07</td>
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<tr>
<td>$14.44</td>
<td>$30,030</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Central Processing Technician (CPT)
- Central Service Technician (CST)
- Central Sterile Supply Technician (CSS Technician)
- Certified Registered Central Service Technician (CRCST)
- Instrument Technician
- Sterile Preparation Technician
- Sterile Processing and Distribution Technician (SPD Technician)
- Sterile Processing Technician
- Sterile Technician
- Sterilization Technician

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Medical Equipment Repairers
Test, adjust, or repair biomedical or electromedical equipment.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Repair shop equipment, metal furniture, or hospital equipment, including welding broken parts or replacing missing parts, or bring item into local shop for major repairs. Supervise or advise subordinate personnel. Keep records of maintenance, repair, and required updates of equipment. Perform preventive maintenance or service, such as cleaning, lubricating, or adjusting equipment. Test, evaluate, and classify excess or in-use medical equipment and determine serviceability, condition, and disposition, in accordance with regulations. Evaluate technical specifications to identify equipment or systems best suited for intended use and possible purchase, based on specifications, user needs, or technical requirements. Disassemble malfunctioning equipment and remove, repair, or replace defective parts, such as motors, clutches, or transformers. Examine medical equipment or facility's structural environment and check for proper use of equipment to protect patients and staff from electrical or mechanical hazards and to ensure compliance with safety regulations. Inspect and test malfunctioning medical or related equipment, following manufacturers' specifications and using test and analysis instruments. Test or calibrate components or equipment, following manufacturers' manuals and troubleshooting techniques, using hand tools, power tools, or measuring devices. Make computations relating to load requirements of wiring or equipment, using algebraic expressions and standard formulas. Plan and carry out work assignments, using blueprints, schematic drawings, technical manuals, wiring diagrams, or liquid or air flow sheets, following prescribed regulations, directives, or other instructions as required. Research catalogs or repair part lists to locate sources for repair parts, requisitioning parts and recording their receipt. Fabricate, dress down, or substitute parts or major new items to modify equipment to meet unique operational or research needs, working from job orders, sketches, modification orders, samples, or discussions with operating officials. Compute power and space requirements for installing medical, dental, or related equipment and install units to manufacturers' specifications. Study technical manuals or attend training sessions provided by equipment manufacturers to maintain current knowledge. Explain or demonstrate correct operation or preventive maintenance of medical equipment to personnel. Contribute expertise to develop medical maintenance standard operating procedures. Solder loose connections, using soldering iron.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tr>
<td></td>
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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
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<td>$26.54</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Bio Medical Technician
Biomed Tech (Biomedical Technician)
Biomedical Electronics Technician
Biomedical Engineering Technician (BMET)
Biomedical Equipment Technician (BMET)
Dental Equipment Technician
Electronic Technician
Repair Technician
Service Technician
X-ray Service Engineer

Post-Secondary Institutions with Programs
Brown Mackie College-Birmingham
Northwest-Shoals Community College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Medical Records and Health Information Technicians

Compile, process, and maintain medical records of hospital and clinic patients in a manner consistent with medical, administrative, ethical, legal, and regulatory requirements of the health care system. Process, maintain, compile, and report patient information for health requirements and standards in a manner consistent with the healthcare industry's numerical coding system.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Manage the department or supervise clerical workers, directing or controlling activities of personnel in the medical records department. Protect the security of medical records to ensure that confidentiality is maintained. Plan, develop, maintain, or operate a variety of health record indexes or storage and retrieval systems to collect, classify, store, or analyze information. Assign the patient to diagnosis-related groups (DRGs), using appropriate computer software. Compile and maintain patients' medical records to document condition and treatment and to provide data for research or cost control and care improvement efforts. Identify, compile, abstract, and code patient data, using standard classification systems. Review records for completeness, accuracy, and compliance with regulations. Process patient admission or discharge documents. Enter data, such as demographic characteristics, history and extent of disease, diagnostic procedures, or treatment into computer. Compile medical care and census data for statistical reports on diseases treated, surgery performed, or use of hospital beds. Retrieve patient medical records for physicians, technicians, or other medical personnel. Resolve or clarify codes or diagnoses with conflicting, missing, or unclear information by consulting with doctors or others or by participating in the coding team's regular meetings. Release information to persons or agencies according to regulations. Consult classification manuals to locate information about disease processes. Post medical insurance billings. Prepare statistical reports, narrative reports, or graphic presentations of information, such as tumor registry data for use by hospital staff, researchers, or other users. Process and prepare business or government forms. Train medical records staff. Develop in-service educational materials.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tr>
<td>Hourly Wage</td>
<td>2016 Estimated Employment: 2,730</td>
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<td>Entry</td>
<td>2026 Projected Employment: 3,010</td>
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<tr>
<td>Average</td>
<td>Average Total Openings: 200</td>
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<tr>
<td>Experienced</td>
<td>Annual Growth Rate: 0.98%</td>
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<tr>
<td>Entry $11.30</td>
<td>Entry $23,500</td>
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<tr>
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<tr>
<td>Experienced $19.92</td>
<td>Experienced $41,430</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Coder
Health Information Clerk
Health Information Specialist
Health Information Technician (Health Information Tech)
Medical Records Analyst
Medical Records Clerk
Medical Records Coordinator
Medical Records Director
Medical Records Technician (Medical Records Tech)
Registered Health Information Technician (RHIT)

Post-Secondary Institutions with Programs

Bishop State Community College
Columbia Southern University
Enterprise State Community College
Fortis Institute-Birmingham
George C Wallace State Community College-Hanceville
Herzing University-Birmingham
Remington College-Mobile Campus
Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Medical Scientists, Except Epidemiologists

Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation, research and development, or other related activities. Includes physicians, dentists, public health specialists, pharmacologists, and medical pathologists who primarily conduct research.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** None

**Tasks:** Prepare and analyze organ, tissue, and cell samples to identify toxicity, bacteria, or microorganisms or to study cell structure. Conduct research to develop methodologies, instrumentation, and procedures for medical application, analyzing data and presenting findings to the scientific audience and general public. Use equipment such as atomic absorption spectrometers, electron microscopes, flow cytometers, or chromatography systems. Study animal and human health and physiological processes. Plan and direct studies to investigate human or animal disease, preventive methods, and treatments for disease. Investigate cause, progress, life cycle, or mode of transmission of diseases or parasites. Standardize drug dosages, methods of immunization, and procedures for manufacture of drugs and medicinal compounds. Follow strict safety procedures when handling toxic materials to avoid contamination. Teach principles of medicine and medical and laboratory procedures to physicians, residents, students, and technicians. Evaluate effects of drugs, gases, pesticides, parasites, and microorganisms at various levels. Consult with and advise physicians, educators, researchers, and others regarding medical applications of physics, biology, and chemistry. Confer with health departments, industry personnel, physicians, and others to develop health safety standards and public health improvement programs. Write and publish articles in scientific journals.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tr>
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<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
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<tr>
<td></td>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
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<tr>
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<td>$41.91</td>
<td>$87,170</td>
</tr>
<tr>
<td>Experienced</td>
<td>$53.17</td>
<td>$110,590</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Associate Director, Experimental Medicine
- Clinical Laboratory Scientist
- Clinical Pharmacologist
- Investigator
- Laboratory Director
- Post-Doctoral Fellow
- Research Scientist
- Scientist
- Senior Research Scientist
- Senior Scientist

### Post-Secondary Institutions with Programs

- Auburn University
- Oakwood University
- Tuskegee University
- University of Alabama at Birmingham
- University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Medical Secretaries
Perform secretarial duties using specific knowledge of medical terminology and hospital, clinic, or laboratory procedures. Duties may include scheduling appointments, billing patients, and compiling and recording medical charts, reports, and correspondence.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Answer telephones and direct calls to appropriate staff. Complete insurance or other claim forms. Greet visitors, ascertain purpose of visit, and direct them to appropriate staff. Schedule and confirm patient diagnostic appointments, surgeries, or medical consultations. Operate office equipment, such as voice mail messaging systems, and use word processing, spreadsheet, or other software applications to prepare reports, invoices, financial statements, letters, case histories, or medical records. Schedule tests or procedures for patients, such as lab work or x-rays, based on physician orders. Interview patients to complete documents, case histories, or forms, such as intake or insurance forms. Maintain medical records, technical library, or correspondence files. Compile and record medical charts, reports, or correspondence, using typewriter or personal computer. Receive and route messages or documents, such as laboratory results, to appropriate staff. Perform bookkeeping duties, such as credits or collections, preparing and sending financial statements or bills, and keeping financial records. Prepare correspondence or assist physicians or medical scientists with preparation of reports, speeches, articles, or conference proceedings. Transcribe recorded messages or practitioners' diagnoses or recommendations into patients' medical records. Transmit correspondence or medical records by mail, e-mail, or fax. Arrange hospital admissions for patients. Perform various clerical or administrative functions, such as ordering and maintaining an inventory of supplies.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>$11.51</td>
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<tr>
<td>Average</td>
<td>$15.79</td>
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<tr>
<td>Experienced</td>
<td>$17.93</td>
</tr>
</tbody>
</table>

2016 Estimated Employment: 5,160
2026 Projected Employment: 6,110
Average Total Openings: 695
Annual Growth Rate: 1.70%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Admissions Coordinator
Billing Coordinator
Health Unit Coordinator
Medical Office Specialist
Medical Secretary
Patient Coordinator
Physician Office Specialist
Unit Secretary
Unit Support Representative
Ward Clerk

Post-Secondary Institutions with Programs
Brown Mackie College-Birmingham
Fortis Institute-Birmingham
Ross Medical Education Center-Huntsville

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Meeting, Convention, and Event Planners

Coordinate activities of staff, convention personnel, or clients to make arrangements for group meetings, events, or conventions.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks: Confer with staff at a chosen event site to coordinate details. Monitor event activities to ensure compliance with applicable regulations and laws, satisfaction of participants, and resolution of any problems that arise. Coordinate services for events, such as accommodation and transportation for participants, facilities, catering, signage, displays, special needs requirements, printing and event security. Maintain records of event aspects, including financial details. Direct administrative details, such as financial operations, dissemination of promotional materials, and responses to inquiries. Consult with customers to determine objectives and requirements for events, such as meetings, conferences, and conventions. Review event bills for accuracy and approve payment. Meet with sponsors and organizing committees to plan scope and format of events, to establish and monitor budgets, or to review administrative procedures and event progress. Plan and develop programs, agendas, budgets, and services according to customer requirements. Conduct post-event evaluations to determine how future events could be improved. Evaluate and select providers of services according to customer requirements. Inspect event facilities to ensure that they conform to customer requirements. Arrange the availability of audio-visual equipment, transportation, displays, and other event needs. Hire, train, and supervise volunteers and support staff required for events. Promote conference, convention and trades show services by performing tasks such as meeting with professional and trade associations, and producing brochures and other publications. Organize registration of event participants. Develop event topics and choose featured speakers. Negotiate contracts with such service providers and suppliers as hotels, convention centers, and speakers. Design and implement efforts to publicize events and promote sponsorships. Read trade publications, attend seminars, and consult with other meeting professionals to keep abreast of meeting management standards and trends. Obtain permits from fire and health departments to erect displays and exhibits and serve food at events.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$13.51</td>
<td>$28,090</td>
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<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$21.05</td>
<td>$43,790</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$24.82</td>
<td>$51,630</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Catering Director
Conference Planner
Conference Planning Manager
Conference Services Director
Conference Services Manager
Convention Services Director
Convention Services Manager (CSM)
Event Coordinator
Events Manager
Special Events Coordinator

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
21-1023 Mental Health and Substance Abuse Social Workers

Assess and treat individuals with mental, emotional, or substance abuse problems, including abuse of alcohol, tobacco, and/or other drugs. Activities may include individual and group therapy, crisis intervention, case management, client advocacy, prevention, and education.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks:
- Assist clients in adhering to treatment plans, such as setting up appointments, arranging for transportation to appointments, or providing support. Collaborate with counselors, physicians, or nurses to plan or coordinate treatment, drawing on social work experience and patient needs. Modify treatment plans according to changes in client status. Monitor, evaluate, and record client progress with respect to treatment goals.
- Supervise or direct other workers who provide services to clients or patients. Interview clients, review records, conduct assessments, or confer with other professionals to evaluate the mental or physical condition of clients or patients.
- Counsel clients in individual or group sessions to assist them in dealing with substance abuse, mental or physical illness, poverty, unemployment, or physical abuse.
- Educate clients or community members about mental or physical illness, abuse, medication, or available community resources.
- Counsel or aid family members to assist them in understanding, dealing with, or supporting the client or patient.
- Refer patient, client, or family to community resources for housing or treatment to assist in recovery from mental or physical illness, following through to ensure service efficacy.
- Develop or advise on social policy or assist in community development.
- Increase social work knowledge by reviewing current literature, conducting social research, or attending seminars, training workshops, or classes.
- Plan or conduct programs to prevent substance abuse, combat social problems, or improve health or counseling services in community.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
<tbody>
<tr>
<td>Entry</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$27,050</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>$18.55</td>
<td>$38,580</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$21.32</td>
<td>$44,350</td>
</tr>
</tbody>
</table>

| 2016 Estimated Employment: | 1,290 |
| 2026 Projected Employment: | 1,500 |
| Average Total Openings:    | 160   |
| Annual Growth Rate:        | 1.52% |

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

- Case Manager
- Clinical Social Worker
- Clinical Therapist
- Clinician
- Counselor
- Mental Health Therapist
- Psychotherapist
- Social Worker
- Substance Abuse Counselor
- Therapist

Post-Secondary Institutions with Programs

- Alabama A & M University
- Alabama State University
- Auburn University
- Jacksonville State University
- Judson College
- Lawson State Community College - Birmingham
- Miles College
- Oakwood University
- Talladega College
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama - Birmingham
- University of Montevallo
- University of North Alabama
- University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**27-1026 Merchandise Displayers and Window Trimmers**

Plan and erect commercial displays, such as those in windows and interiors of retail stores and at trade exhibitions.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Place prices or descriptive signs on backdrops, fixtures, merchandise, or floor. Instruct sales staff in color coordination of clothing racks or counter displays. Consult with store managers, buyers, sales associates, housekeeping staff, or engineering staff to determine appropriate placement of displays or products. Maintain props, products, or mannequins, inspecting them for imperfections, doing touch-ups, cleaning up after customers, or applying preservative coatings as necessary. Arrange properties, furniture, merchandise, backdrops, or other accessories, as shown in prepared sketches. Assemble or set up displays, furniture, or products in store space while utilizing colors, lights, pictures, or other accessories to display the product. Develop ideas or plans for merchandise displays or window decorations. Take photographs of displays or signage. Dress mannequins for displays. Consult with advertising or sales staff to determine type of merchandise to be featured and time and place for each display. Supervise or train staff members on daily tasks, such as visual merchandising. Create or enhance mannequin faces by mixing and applying paint or attaching measured eyelash strips, using artist's brush, airbrush, pins, ruler, or scissors. Change or rotate window displays, interior display areas, or signage to reflect changes in inventory or promotion. Prepare sketches, floor plans, or models of proposed displays. Use computers to produce signage. Construct or assemble displays or display components from fabric, glass, paper, or plastic, using hand tools or woodworking power tools, according to specifications. Plan commercial displays to entice and appeal to customers. Select themes, lighting, colors, or props to be used. Collaborate with others to obtain products or other display items. Cut out designs on cardboard, hardboard, or plywood, according to motif of event. Install booths, exhibits, displays, carpets, or drapes, as guided by floor plan of building or specifications. Obtain plans from display designers or display managers and discuss their implementation with clients or supervisors. Store, pack, and maintain inventory records of props, products, or display items. Install decorations, such as flags, banners, festive lights, or bunting on or in building, street, exhibit hall, or booth. Attend training sessions or corporate planning meetings to obtain new ideas for product launches.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
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</thead>
<tbody>
<tr>
<td>Entry</td>
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<td>Entry $19,160</td>
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<tr>
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<tr>
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</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Decorator
- Display Associate
- Display Decorator
- Display Specialist
- In-Store Marketing Associate
- Merchandiser
- Visual Manager
- Visual Merchandiser (VM)
- Visual Merchandising Manager
- Visual Merchandising Specialist

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
Millwrights

Install, dismantle, or move machinery and heavy equipment according to layout plans, blueprints, or other drawings.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 4 years, up to and including 10 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Assemble machines, and bolt, weld, rivet, or otherwise fasten them to foundation or other structures, using hand tools and power tools. Insert shims, adjust tension on nuts and bolts, or position parts, using hand tools and measuring instruments, to set specified clearances between moving and stationary parts. Dismantle machines, using hammers, wrenches, crowbars, and other hand tools. Fabricate and dismantle parts, equipment, and machines, using a cutting torch or other cutting equipment. Lay out mounting holes, using measuring instruments, and drill holes with power drill. Move machinery and equipment, using hoists, dollies, rollers, and trucks. Align machines or equipment, using hoists, jacks, hand tools, squares, rules, micrometers, lasers, or plumb bobs. Assemble and install equipment, using hand tools and power tools. Signal crane operator to lower basic assembly units to bedplate, and align unit to centerline. Attach moving parts and subassemblies to basic assembly unit, using hand tools and power tools. Replace defective parts of machine or adjust clearances and alignment of moving parts. Level bedplate and establish centerline, using straightedge, levels, and transit. Conduct preventative maintenance and repair, and lubricate machines and equipment. Dismantle machinery and equipment for shipment to installation site, usually performing installation and maintenance work as part of team. Bolt parts, such as side and deck plates, jaw plates, and journals, to basic assembly unit. Shrink-fit bushings, sleeves, rings, liners, gears, and wheels to specified items, using portable gas heating equipment. Weld, repair, and fabricate equipment or machinery. Install robot and modify its program, using teach pendant. Position steel beams to support bedplates of machines and equipment, using blueprints and schematic drawings, to determine work procedures. Connect power unit to machines or steam piping to equipment, and test unit to evaluate its mechanical operation. Troubleshoot equipment, electrical components, hydraulics, or other mechanical systems. Operate engine lathe to grind, file, and turn machine parts to dimensional specifications. Construct foundation for machines, using hand tools and building materials such as wood, cement, and steel.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
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<td>Hourly Wage</td>
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<td>$25.15</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Maintenance Mechanic
Maintenance Millwright
Mechanical Superintendent
Millwright
Millwright Business Representative
Millwright Instructor
Precision Millwright

Post-Secondary Institutions with Programs
Gadsden State Community College
George C Wallace Community College - Dothan
George C Wallace Community College - Selma
H Councill Trenholm State Technical College
J F Drake State Community and Technical College
James H Faulkner State Community College
John C Calhoun State Community College
Lawson State Community College - Birmingham
Northeast Alabama Community College
Northwest-Shoals Community College - Muscle Shoals
Shelton State Community College
Southern Union State Community College
University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
51-9195  Molders, Shapers, and Casters, Except Metal and Plastic
Mold, shape, form, cast, or carve products such as food products, figurines, tile, pipes, and candles consisting of clay, glass, plaster, concrete, stone, or combinations of materials.

Education:  These occupations usually require a high school diploma.
OJT:  Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.
Tasks:  Read work orders or examine parts to determine parts or sections of products to be produced. Trim or remove excess material, using scrapers, knives, or band saws. Pour, pack, spread, or press plaster, concrete, liquid plastic, or other materials into or around models or molds. Engrave or stamp identifying symbols, letters, or numbers on products. Brush or spray mold surfaces with parting agents or insert paper into molds to ensure smoothness and prevent sticking or seepage. Assemble, insert, and adjust wires, tubes, cores, fittings, rods, or patterns into molds, using hand tools and depth gauges. Clean, finish, and lubricate molds and mold parts. Separate models or patterns from molds and examine products for accuracy. Set the proper operating temperature for each casting. Load or stack filled molds in ovens, dryers, or curing boxes, or on storage racks or carts. Align and assemble parts to produce completed products, using gauges and hand tools. Operate and adjust controls of heating equipment to melt material or to cure, dry, or bake filled molds. Select sizes and types of molds according to instructions. Withdraw cores or other loose mold members after castings solidify. Patch broken edges or fractures, using clay or plaster. Repair mold defects, such as cracks or broken edges, using patterns, mold boxes, or hand tools. Measure and cut products to specified dimensions, using measuring and cutting instruments. Smooth surfaces of molds, using scraping tools or sandpaper. Measure ingredients and mix molding, casting material, or sealing compounds to prescribed consistencies, according to formulas. Remove excess materials and level and smooth wet mold mixtures. Operate molding machines that compact sand in flasks to form molds. Place forms around models and separately immerse each half portion of a model in plaster, wax, or other mold-making materials. Verify dimensions of products, using measuring instruments, such as calipers, vernier gauges, or protractors. Construct or form molds for use in casting metal, clay, or plaster objects, using plaster, fiberglass, rubber, casting machines, patterns, or flasks. Bore holes or cut grates, risers, or pouring spouts in molds, using power tools. Locate and scribe parting lines on patterns, using measuring instruments, such as calipers, squares, or depth gauges. Tap or tilt molds to ensure uniform distribution of materials. Melt metal pieces, using torches, and cast products, such as inlays and crowns, using centrifugal casting machines.

License:  License Not Required.
Outlook:  Very Good

Alabama Employment Outlook

<table>
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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Fabricator
Injection Molding Machine Operator
Machine Operator
Mold Mechanic
Molding Line Operator
Press Operator

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Set up, operate, or tend metal or plastic molding, casting, or coremaking machines to mold or cast metal or thermoplastic parts or products.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Turn valves and dials of machines to regulate pressure, temperature, and speed and feed rates, and to set cycle times.
- Set up, operate, or tend metal or plastic molding, casting, or coremaking machines to mold or cast metal or thermoplastic parts or products. Observe continuous operation of automatic machines to ensure that products meet specifications and to detect jams or malfunctions, making adjustments as necessary.
- Install dies onto machines or presses and coat dies with parting agents, according to work order specifications.
- Remove finished or cured products from dies or molds, using hand tools, air hoses, and other equipment, stamping identifying information on products when necessary.
- Observe meters and gauges to verify and record temperatures, pressures, and press-cycle times. Perform maintenance work such as cleaning and oiling machines. Assemble shell halves, patterns, and foundry flasks, and reinforce core boxes, using glue, clamps, wire, bolts, rams, or machines. Cool products after processing to prevent distortion.
- Clamp metal and plywood strips around dies or patterns to form molds.
- Unload finished products from conveyor belts, pack them in containers, and place containers in warehouses. Read specifications, blueprints, and work orders to determine setups, temperatures, and time settings required to mold, form, or cast plastic materials, as well as to plan production sequences.
- Preheat tools, dies, plastic materials, or patterns, using blowtorches or other equipment. Smooth and clean inner surfaces of molds, using brushes, scrapers, air hoses, or grinding wheels, and fill imperfections with refractory material. Skim or pour dross, slag, or impurities from molten metal, using ladles, rakes, hoes, spatulas, or spoons. Select coolants and lubricants, and start their flow.
- Shape molds to specified contours, using sand, and trowels and related tools.
- Trim excess material from parts, using knives, and grind scrap plastic into powder for reuse.
- Pull level and toggle latches to fill molds, to regulate tension on sheeting, and to release mold covers.
- Measure and visually inspect products for surface and dimension defects to ensure conformance to specifications, using precision measuring instruments. Select and install blades, tools, or other attachments for each operation. Repair or replace damaged molds, pipes, belts, chains, or other equipment, using hand tools, hand-powered presses, or jib cranes. Operate hoists to position dies or patterns on foundry floors.
- Spray, smoke, or coat molds with compounds to lubricate or insulate molds, using acetylene torches or sprayers. Maintain inventories of materials. Adjust equipment and workpiece holding fixtures, such as mold frames, tubs, and cutting tables, to ensure proper functioning.
- Position and secure workpieces on machines, and start feeding mechanisms.
- Inventory and record quantities of materials and finished products, requisitioning additional supplies as necessary.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
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<th>Alabama Projections</th>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td><strong>2026 Projected Employment:</strong></td>
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</tr>
<tr>
<td></td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Core Machine Operator
- Die Cast Technician
- Diecast Machine Operator
- Machine Operator
- Mold Setter
- Mold Technician
- Molder
- Press Operator
- Process Technician
- Production Technician

### Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Set up, operate, or tend more than one type of cutting or forming machine tool or robot.

Education:  These occupations typically require a high school diploma.

OJT:  Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks:  Select the proper coolants and lubricants and start their flow. Select, install, and adjust alignment of drills, cutters, dies, guides, and holding devices, using templates, measuring instruments, and hand tools. Observe machine operation to detect workpiece defects or machine malfunctions, adjusting machines as necessary. Perform minor machine maintenance, such as oiling or cleaning machines, dies, or workpieces, or adding coolant to machine reservoirs. Record operational data, such as pressure readings, lengths of strokes, feed rates, or speeds. Compute data, such as gear dimensions or machine settings, applying knowledge of shop mathematics. Position, adjust, and secure stock material or workpieces against stops, on arbors, or in chucks, fixtures, or automatic feeding mechanisms, manually or using hoists. Inspect workpieces for defects, and measure workpieces to determine accuracy of machine operation, using rules, templates, or other measuring instruments. Measure and mark reference points and cutting lines on workpieces, using traced templates, compasses, and rules. Start machines and turn handwheels or valves to engage feeding, cooling, and lubricating mechanisms. Move controls or mount gears, cams, or templates in machines to set feed rates and cutting speeds, depths, and angles. Set up and operate machines, such as lathes, cutters, shears, borers, mills, grinders, presses, drills, or auxiliary machines, to make metallic and plastic workpieces. Read blueprints or job orders to determine product specifications and tooling instructions and to plan operational sequences. Extract or lift jammed pieces from machines, using fingers, wire hooks, or lift bars. Change worn machine accessories, such as cutting tools or brushes, using hand tools. Make minor electrical and mechanical repairs and adjustments to machines and notify supervisors when major service is required. Remove burrs, sharp edges, rust, or scale from workpieces, using files, hand grinders, wire brushes, or power tools. Set machine stops or guides to specified lengths as indicated by scales, rules, or templates. Instruct other workers in machine set-up and operation. Align layout marks with dies or blades.

License:  License Not Required.

Outlook:  Good

Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>$25,370</td>
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<td>Experienced</td>
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<tr>
<td>$17.45</td>
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<tr>
<td>$36,290</td>
<td>$36,290</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Cell Technician
- CNC Machine Setter (Computer Numerically Controlled Machine Setter)
- CNC Machinist (Computer Numerically Controlled Machinist)
- CNC Operator (Computer Numerically Controlled Operator)
- Die Setter
- Machine Operator
- Machine Technician
- Machinist
- Operator
- Set-Up Person

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Network and Computer Systems Administrators

Install, configure, and support an organization's local area network (LAN), wide area network (WAN), and Internet systems. Monitor network to ensure network availability, perform necessary maintenance to support network availability. Monitor and test performance of web sites for correct operation with no interruption. May assist in network modeling, analysis, planning, and coordination between network and data communications hardware and software. May supervise computer user support specialists and computer network support specialists. May administer network security measures.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Perform data backups and disaster recovery operations. Operate master consoles to monitor the performance of computer systems and networks, and to coordinate computer network access and use. Configure, monitor, and maintain email applications or virus protection software. Implement and provide technical support for voice services and equipment, such as private branch exchange, voice mail system, and telecom system. Maintain and administer computer networks and related computing environments including computer hardware, systems software, applications software, and all configurations. Load computer tapes and disks, and install software and printer paper or forms. Monitor network performance to determine whether adjustments need to be made, and to determine where changes will need to be made in the future. Maintain logs related to network functions, as well as maintenance and repair records. Diagnose, troubleshoot, and resolve hardware, software, or other network and system problems, and replace defective components when necessary. Analyze equipment performance records to determine the need for repair or replacement. Confer with network users about how to solve existing system problems. Perform routine network startup and shutdown procedures, and maintain control records. Train people in computer system use. Recommend changes to improve systems and network configurations, and determine hardware or software requirements related to such changes. Design, configure, and test computer hardware, networking software and operating system software. Plan, coordinate, and implement network security measures to protect data, software, and hardware. Gather data pertaining to customer needs, and use the information to identify, predict, interpret, and evaluate system and network requirements. Maintain an inventory of parts for emergency repairs.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
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<tr>
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</tr>
<tr>
<td></td>
<td>Experienced</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Information Analyst
- Information Systems Manager (IS Manager)
- Information Technology Specialist (IT Specialist)
- LAN Specialist (Local Area Network Specialist)
- Local Area Network Administrator (LAN Administrator)
- Network Administrator
- Network Coordinator
- Network Manager
- Network Specialist
- Systems Administrator

Post-Secondary Institutions with Programs
- Alabama A & M University
- Athens State University
- Auburn University
- Auburn University - Montgomery
- Jacksonville State University
- James H Faulkner State Community College
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of Mobile
- University of North Alabama
- University of South Alabama
- Wallace State Community College
**Nonfarm Animal Caretakers**

Feed, water, groom, bathe, exercise, or otherwise care for pets and other nonfarm animals, such as dogs, cats, ornamental fish or birds, zoo animals, and mice. Work in settings such as kennels, animal shelters, zoos, circuses, and aquariums. May keep records of feedings, treatments, and animals received or discharged. May clean, disinfect, and repair cages, pens, or fish tanks.

**Education:** These occupations typically require less than a high school diploma - or the equivalent.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Examine and observe animals to detect signs of illness, disease, or injury. Adjust controls to regulate specified temperature and humidity of animal quarters, nurseries, or exhibit areas. Feed and water animals according to schedules and feeding instructions. Mix food, liquid formulas, medications, or food supplements according to instructions, prescriptions, and knowledge of animal species. Collect and record animal information, such as weight, size, physical condition, treatments received, medications given, and food intake. Do facility laundry and clean, organize, maintain, and disinfect animal quarters, such as pens and stables, and equipment, such as saddles and bridle. Train animals to perform certain tasks. Observe and caution children petting and feeding animals in designated areas to ensure the safety of humans and animals. Clean and disinfect surgical equipment. Discuss with clients their pets' grooming needs. Sell pet food and supplies. Perform animal grooming duties, such as washing, brushing, clipping, and trimming coats, cutting nails, and cleaning ears. Exercise animals to maintain their physical and mental health. Answer telephones and schedule appointments. Provide treatment to sick or injured animals, or contact veterinarians to secure treatment. Respond to questions from patrons, and provide information about animals, such as behavior, habitat, breeding habits, or facility activities. Install, maintain, and repair animal care facility equipment, such as infrared lights, feeding devices, and cages. Transfer animals between enclosures to facilitate breeding, birthing, shipping, or rearrangement of exhibits. Anesthetize and inoculate animals, according to instructions. Order, unload, and store feed and supplies. Find homes for stray or unwanted animals.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tr>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
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<td>Entry</td>
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<tr>
<td>$8.32</td>
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<td>$9.98</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Animal Care Giver (ACG)
- Animal Care Technician
- Aquarist
- Dog Groomer
- Groomer
- Kennel Attendant
- Kennel Manager
- Kennel Technician
- Pet Groomer
- Pet Stylist

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
29-2033 Nuclear Medicine Technologists

Prepare, administer, and measure radioactive isotopes in therapeutic, diagnostic, and tracer studies using a variety of radioisotope equipment. Prepare stock solutions of radioactive materials and calculate doses to be administered by radiologists. Subject patients to radiation. Execute blood volume, red cell survival, and fat absorption studies following standard laboratory techniques.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Perform quality control checks on laboratory equipment or cameras. Administer radiopharmaceuticals or radiation intravenously to detect or treat diseases, using radioisotope equipment, under direction of a physician. Detect and map radiopharmaceuticals in patients' bodies, using a camera to produce photographic or computer images. Maintain and calibrate radioisotope and laboratory equipment. Explain test procedures and safety precautions to patients and provide them with assistance during test procedures. Record and process results of procedures. Produce a computer-generated or film image for interpretation by a physician.
- Calculate, measure, and record radiation dosage or radiopharmaceuticals received, used, and disposed, using computer and following physician's prescription. Position radiation fields, radiation beams, and patient to allow for most effective treatment of patient's disease, using computer. Dispose of radioactive materials and store radiopharmaceuticals, following radiation safety procedures. Gather information on patients' illnesses and medical history to guide the choice of diagnostic procedures for therapy. Process cardiac function studies, using computer.
- Prepare stock radiopharmaceuticals, adhering to safety standards that minimize radiation exposure to workers and patients. Add radioactive substances to biological specimens, such as blood, urine, or feces, to determine therapeutic drug or hormone levels. Measure glandular activity, blood volume, red cell survival, or radioactivity of patient, using scanners, Geiger counters, scintillometers, or other laboratory equipment. Train or supervise student or subordinate nuclear medicine technologists. Develop treatment procedures for nuclear medicine treatment programs.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
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<th>Annual Growth Rate:</th>
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<tbody>
<tr>
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<tr>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Certified Nuclear Medicine Technologist (CNMT)
- Lead Nuclear Medicine Technologist (Lead Nuc Med Tech)
- Nuclear Cardiology Technologist
- Nuclear Medicine PET-CT Technologist (Nuclear Medicine Positron Emission Tomography - Computed Tomography Technologist)
- Nuclear Medicine Technologist (Nuclear Med Tech)
- Radiation Safety Officer
- Registered Nuclear Medicine Technologist
- Senior Nuclear Medicine Technologist
- Staff Nuclear Medicine Technologist
- Supervisor Nuclear Medicine

**Post-Secondary Institutions with Programs**
- University of Alabama at Birmingham

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-1151  Nurse Anesthetists

Administer anesthesia, monitor patient's vital signs, and oversee patient recovery from anesthesia. May assist anesthesiologists, surgeons, other physicians, or dentists. Must be registered nurses who have specialized graduate education.

**Education:**  Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:**  None

**Tasks:**  Perform pre-anesthetic screenings, including physical evaluations and patient interviews, and document results. Assess patients' medical histories to predict anesthesia response. Obtain informed consent from patients for anesthesia procedures. Select and prescribe post-anesthesia medications or treatments to patients. Select, order, or administer pre-anesthetic medications. Develop anesthesia care plans. Manage patients' airway or pulmonary status, using techniques such as endotracheal intubation, mechanical ventilation, pharmacological support, respiratory therapy, and extubation. Monitor patients' responses, including skin color, pupil dilation, pulse, heart rate, blood pressure, respiration, ventilation, or urine output, using invasive and noninvasive techniques. Select, prepare, or use equipment, monitors, supplies, or drugs for the administration of anesthetics. Perform or evaluate the results of diagnostic tests, such as radiographs (x-rays) and electrocardiograms (EKGs). Calibrate and test anesthesia equipment. Evaluate patients' post-surgical or post-anesthesia responses, taking appropriate corrective actions or requesting consultation if complications occur. Select, order, or administer anesthetics, adjuvant drugs, accessory drugs, fluids or blood products as necessary. Discharge patients from post-anesthesia care. Disassemble and clean anesthesia equipment. Insert peripheral or central intravenous catheters. Prepare prescribed solutions and administer local, intravenous, spinal, or other anesthetics, following specified methods and procedures. Administer post-anesthesia medications or fluids to support patients' cardiovascular systems. Insert arterial catheters or perform arterial punctures to obtain arterial blood samples. Read current literature, talk with colleagues, and participate in professional organizations or conferences to keep abreast of developments in nursing. Perform or manage regional anesthetic techniques, such as local, spinal, epidural, caudal, nerve blocks and intravenous blocks. Respond to emergency situations by providing airway management, administering emergency fluids or drugs, or using basic or advanced cardiac life support techniques. Request anesthesia equipment repairs, adjustments, or safety tests. Instruct nurses, residents, interns, students, or other staff on topics such as anesthetic techniques, pain management and emergency responses.

**License:**  Initial Application Fee for CRNA: $150.00 Biennial Renewal Fee for RN and CRNA: $150.00

**Outlook:**  Good

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**Alabama Wage Data**

<table>
<thead>
<tr>
<th>Entry</th>
<th>Average</th>
<th>Experienced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
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<tr>
<td>Annual Wage</td>
<td>$128,780</td>
<td>$166,950</td>
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**Alabama Projections**

- 2016 Estimated Employment: 1,750
- 2026 Projected Employment: 2,020
- Average Total Openings: 115
- Annual Growth Rate: 1.45%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Associate Professor
- Program Director, Nurse Anesthesia
- Certified Registered Nurse Anesthetist (CRNA)
- Chief Certified Registered Nurse Anesthetist (Chief CRNA)
- Chief Nurse Anesthetist
- Nurse Anesthetist
- Professor/Nurse Anesthetist
- Senior Certified Registered Nurse Anesthetist (Senior CRNA)
- Staff Certified Registered Nurse Anesthetist (Staff CRNA)
- Staff Certified Registered Nurse Anesthetist, Anesthesia Service (Staff CRNA, Anesthesia Service)
- Staff Nurse Anesthetist

**Post-Secondary Institutions with Programs**

- Samford University
- University of Alabama at Birmingham

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Nurse Practitioners

Diagnose and treat acute, episodic, or chronic illness, independently or as part of a healthcare team. May focus on health promotion and disease prevention. May order, perform, or interpret diagnostic tests such as lab work and x rays. May prescribe medication. Must be registered nurses who have specialized graduate education.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Maintain complete and detailed records of patients' health care plans and prognoses. Analyze and interpret patients' histories, symptoms, physical findings, or diagnostic information to develop appropriate diagnoses. Prescribe medications based on efficacy, safety, and cost as legally authorized. Diagnose or treat acute health care problems, such as illnesses, infections, or injuries. Recommend diagnostic or therapeutic interventions with attention to safety, cost, invasiveness, simplicity, acceptability, adherence, and efficacy. Educate patients about self-management of acute or chronic illnesses, tailoring instructions to patients' individual circumstances. Provide patients with information needed to promote health, reduce risk factors, or prevent disease or disability. Prescribe medication dosages, routes, and frequencies, based on such patient characteristics as age and gender. Develop treatment plans, based on scientific rationale, standards of care, and professional practice guidelines. Treat or refer patients for primary care conditions, such as headaches, hypertension, urinary tract infections, upper respiratory infections, and dermatological conditions. Order, perform, or interpret the results of diagnostic tests, such as complete blood counts (CBCs), electrocardiograms (EKGs), and radiographs (x-rays). Recommend interventions to modify behavior associated with health risks. Consult with, or refer patients to, appropriate specialists when conditions exceed the scope of practice or expertise. Supervise or coordinate patient care or support staff activities. Diagnose or treat chronic health care problems, such as high blood pressure and diabetes. Schedule follow-up visits to monitor patients or evaluate health or illness care. Provide patients or caregivers with assistance in locating health care resources. Counsel patients about drug regimens and possible side effects or interactions with other substances, such as food supplements, over-the-counter (OTC) medications, or herbal remedies. Diagnose or treat complex, unstable, comorbid, episodic, or emergency conditions in collaboration with other health care providers as necessary. Perform primary care procedures such as suturing, splinting, administering immunizations, taking cultures, and debriding wounds. Keep abreast of regulatory processes and payer systems, such as Medicare, Medicaid, managed care, and private sources.

License: Initial Application Fee for CNS: $150.00 Biennial Renewal Fee for RN and CNS: $150.00

Outlook: Very Good

Alabama Wage Data

<table>
<thead>
<tr>
<th>Hourly Wage</th>
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<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$31.92</td>
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<tr>
<td>Average</td>
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<td>$45.62</td>
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<tr>
<td>$52.47</td>
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</table>

Alabama Projections

2016 Estimated Employment: 2,760

2026 Projected Employment: 3,600

Average Total Openings: 235

Annual Growth Rate: 2.69%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Acute Care Nurse Practitioner
Adult Nurse Practitioner
Advanced Practice Registered Nurse (APRN)
Family Nurse Practitioner
Family Practice Certified Advanced Registered Nurse Practitioner
Gastroenterology Nurse Practitioner
Nurse Practitioner
Nurse Practitioner, Adult
Pediatric Nurse Practitioner
Women's Health Care Nurse Practitioner

Post-Secondary Institutions with Programs

Samford University
The University of Alabama
University of Alabama - Birmingham
University of Alabama - Huntsville
University of South Alabama

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Nursing Assistants

Provide basic patient care under direction of nursing staff. Perform duties such as feed, bathe, dress, groom, or move patients, or change linens. May transfer or transport patients. Includes nursing care attendants, nursing aides, and nursing attendants.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Remind patients to take medications or nutritional supplements. Restock patient rooms with personal hygiene items, such as towels, washcloths, soap, or toilet paper. Prepare or serve food trays. Review patients' dietary restrictions, food allergies, and preferences to ensure patient receives appropriate diet. Clean and sanitize patient rooms, bathrooms, examination rooms, or other patient areas. Gather information from caregivers, nurses, or physicians about patient condition, treatment plans, or appropriate activities. Observe or examine patients to detect symptoms that may require medical attention, such as bruises, open wounds, or blood in urine. Answer patient call signals, signal lights, bells, or intercom systems to determine patients' needs. Measure and record food and liquid intake or urinary and fecal output, reporting changes to medical or nursing staff. Change bed linens or make beds. Document or otherwise report observations of patient behavior, complaints, or physical symptoms to nurses. Lift or assist others to lift patients to move them on or off beds, examination tables, surgical tables, or stretchers. Undress, wash, and dress patients who are unable to do so for themselves. Assist nurses or physicians in the operation of medical equipment or provision of patient care. Supply, collect, or empty bedpans. Apply clean dressings, slings, stockings, or support bandages, under direction of nurse or physician. Transport specimens, laboratory items, or pharmacy items, ensuring proper documentation and delivery to authorized personnel. Administer medications or treatments, such as catheterizations, suppositories, irrigations, enemas, massages, or douches, as directed by a physician or nurse. Provide physical support to assist patients to perform daily living activities, such as getting out of bed, bathing, dressing, using the toilet, standing, walking, or exercising. Transport patients to treatment units, testing units, operating rooms, or other areas, using wheelchairs, stretchers, or moveable beds. Communicate with patients to ascertain feelings or need for assistance or social and emotional support. Provide information such as directions, visiting hours, or patient status information to visitors or callers. Exercise patients who are comatose, paralyzed, or have restricted mobility. Record vital signs, such as temperature, blood pressure, pulse, or respiration rate, as directed by medical or nursing staff.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
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<td><strong>Entry</strong></td>
<td><strong>Entry</strong></td>
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<tr>
<td>$12.16</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Certified Medication Aide (CMA)
Certified Nurse Aide (CNA)
Certified Nurses Aide (CNA)
Certified Nursing Assistant (CNA)
Geriatric Nursing Assistant (GNA)
Licensed Nursing Assistant (LNA)
Nurses’ Aide
Nursing Aide
Nursing Assistant
State Tested Nursing Assistant (STNA)

Post-Secondary Institutions with Programs
Gadsden State Community College
George C Wallace State Community College-Hanceville
George C Wallace State Community College-Selma
H Councill Trenholm State Community College
Reid State Technical College
Shelton State Community College
Snead State Community College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-9011 Occupational Health and Safety Specialists

Review, evaluate, and analyze work environments and design programs and procedures to control, eliminate, and prevent disease or injury caused by chemical, physical, and biological agents or ergonomic factors. May conduct inspections and enforce adherence to laws and regulations governing the health and safety of individuals. May be employed in the public or private sector. Includes environmental protection officers.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Investigate the adequacy of ventilation, exhaust equipment, lighting, or other conditions that could affect employee health, comfort, or performance. Inspect or evaluate workplace environments, equipment, or practices to ensure compliance with safety standards and government regulations. Investigate health-related complaints and inspect facilities to ensure that they comply with public health legislation and regulations. Conduct safety training or education programs and demonstrate the use of safety equipment. Recommend measures to help protect workers from potentially hazardous work methods, processes, or materials. Collaborate with engineers or physicians to institute control or remedial measures for hazardous or potentially hazardous conditions or equipment. Collect samples of hazardous materials or arrange for sample collection. Investigate accidents to identify causes or to determine how such accidents might be prevented in the future. Develop or maintain hygiene programs, such as noise surveys, continuous atmosphere monitoring, ventilation surveys, or asbestos management plans. Collect samples of dust, gases, vapors, or other potentially toxic materials for analysis. Provide new-employee health and safety orientations and develop materials for these presentations. Inspect specified areas to ensure the presence of fire prevention equipment, safety equipment, or first-aid supplies. Maintain inventories of hazardous materials or hazardous wastes, using waste tracking systems to ensure that materials are handled properly. Perform laboratory analyses or physical inspections of samples to detect disease or to assess purity or cleanliness. Coordinate "right-to-know" programs regarding hazardous chemicals or other substances. Order suspension of activities that pose threats to workers' health or safety. Maintain or update emergency response plans or procedures. Prepare hazardous, radioactive, or mixed waste samples for transportation or storage by treating, compacting, packaging, and labeling them. Conduct audits at hazardous waste sites or industrial sites or participate in hazardous waste site investigations. Develop or maintain medical monitoring programs for employees.

License: License Not Required.

Outlook: Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>$19.83</td>
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<tr>
<td>Annual Growth Rate: 0.86%</td>
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</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Certified Industrial Hygienist
- Chief Safety Officer
- Corporate Safety Director
- Director Employee Safety and Health
- Environmental Health and Safety Manager
- Environmental, Health, and Safety EHS Officer
- Health and Safety Manager
- Risk Control Consultant
- Safety Consultant
- Safety Specialist

**Post-Secondary Institutions with Programs**
- Columbia Southern University
- Jacksonville State University

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-1122 Occupational Therapists
Assess, plan, organize, and participate in rehabilitative programs that help build or restore vocational, homemaking, and daily living skills, as well as general independence, to persons with disabilities or developmental delays.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Complete and maintain necessary records. Recommend changes in patients' work or living environments, consistent with their needs and capabilities. Test and evaluate patients' physical and mental abilities and analyze medical data to determine realistic rehabilitation goals for patients. Consult with rehabilitation team to select activity programs or coordinate occupational therapy with other therapeutic activities. Select activities that will help individuals learn work and life-management skills within limits of their mental or physical capabilities. Train caregivers how to provide for the needs of a patient during and after therapy. Evaluate patients' progress and prepare reports that detail progress. Lay out materials such as puzzles, scissors and eating utensils for use in therapy, and clean and repair these tools after therapy sessions. Help clients improve decision making, abstract reasoning, memory, sequencing, coordination, and perceptual skills, using computer programs. Plan, organize, and conduct occupational therapy programs in hospital, institutional, or community settings to help rehabilitate those impaired because of illness, injury or psychological or developmental problems. Provide training and supervision in therapy techniques and objectives for students or nurses and other medical staff. Design and create, or requisition, special supplies and equipment, such as splints, braces, and computer-aided adaptive equipment. Advise on health risks in the workplace or on health-related transition to retirement. Plan and implement programs and social activities to help patients learn work or school skills and adjust to handicaps. Develop and participate in health promotion programs, group activities, or discussions to promote client health, facilitate social adjustment, alleviate stress, and prevent physical or mental disability. Conduct research in occupational therapy. Provide patients with assistance in locating or holding jobs.

License: Initial License Fee: $140.00 Renewal Fee: $140.00 Renewal Late Fee: $50.00

Outlook: Very Good

Alabama Employment Outlook

<table>
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<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$28.61</td>
<td>$59,500</td>
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<td>Average</td>
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<tr>
<td>$39.13</td>
<td>$81,390</td>
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<tr>
<td>$44.39</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Assistive Technology Trainer
Early Intervention Occupational Therapist
Industrial Rehabilitation Consultant
Occupational Therapist (OT)
Pediatric Occupational Therapist
Registered Occupational Therapist
Rehabilitation Supervisor
Staff Occupational Therapist
Staff Therapist

Post-Secondary Institutions with Programs
Alabama State University
Oakwood University
Tuskegee University
University of Alabama at Birmingham
University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
31-2011 Occupational Therapy Assistants

Assist occupational therapists in providing occupational therapy treatments and procedures. May, in accordance with State laws, assist in development of treatment plans, carry out routine functions, direct activity programs, and document the progress of treatments. Generally requires formal training.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Perform clerical duties, such as scheduling appointments, collecting data, or documenting health insurance billings. Evaluate the daily living skills or capacities of physically, developmentally, or emotionally disabled clients. Monitor patients' performance in therapy activities, providing encouragement. Work under the direction of occupational therapists to plan, implement, or administer educational, vocational, or recreational programs that restore or enhance performance in individuals with functional impairments. Assemble, clean, or maintain equipment or materials for patient use. Communicate and collaborate with other healthcare professionals involved with the care of a patient. Implement, or assist occupational therapists with implementing, treatment plans designed to help clients function independently. Transport patients to and from the occupational therapy work area. Select therapy activities to fit patients' needs and capabilities. Observe and record patients' progress, attitudes, and behavior and maintain this information in client records. Attend care plan meetings to review patient progress and update care plans. Maintain and promote a positive attitude toward clients and their treatment programs. Aid patients in dressing and grooming themselves. Instruct, or assist in instructing, patients and families in home programs, basic living skills, or the care and use of adaptive equipment. Design, fabricate, or repair assistive devices or make adaptive changes to equipment or environments. Alter treatment programs to obtain better results if treatment is not having the intended effect. Teach patients how to deal constructively with their emotions. Order any needed educational or treatment supplies. Attend continuing education classes.

License: License Fee: $115.00 License Renewal Fee: $115.00 Renewal Late Fee: $50.00

Outlook: Very Good

Alabama Wage Data

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<tr>
<th></th>
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<th>Average</th>
<th>Experienced</th>
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<tbody>
<tr>
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<td>Annual</td>
<td>$43,840</td>
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<td>$63,000</td>
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Alabama Projections

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<td>Average Total Openings:</td>
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<tr>
<td>Annual Growth Rate:</td>
<td>2.82%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Acute Care Occupational Therapy Assistant
Certified Occupational Therapist Assistant (COTA)
Certified Occupational Therapist Assistant/Licensed (COTA/L)
Certified Occupational Therapy Assistant (COTA)
Certified Occupational Therapy Assistant-Licensed (COTA-L)
Licensed Occupational Therapy Assistant
Occupational Therapist Assistant
Occupational Therapy Assistant (OTA)
School Based Certified Occupational Therapy Assistant
Staff Certified Occupational Therapist Assistant/Licensed (Staff COTA/L)

Post-Secondary Institutions with Programs

Brown Mackie College-Birmingham
George C Wallace State Community College-Hanceville

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Operating Engineers and Other Construction Equipment Operators

Operate one or several types of power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, shovels, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete or other hard surface pavement. May repair and maintain equipment in addition to other duties.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Keep records of material or equipment usage or problems encountered. Check fuel supplies at sites to ensure adequate availability. Monitor operations to ensure that health and safety standards are met. Learn and follow safety regulations. Start engines, move throttles, switches, or levers, or depress pedals to operate machines, such as bulldozers, trench excavators, road graders, or backhoes. Adjust handwheels and depress pedals to control attachments, such as blades, buckets, scrapers, or swing booms. Load and move dirt, rocks, equipment, or other materials, using trucks, crawler tractors, power cranes, shovels, graders, or related equipment. Take actions to avoid potential hazards or obstructions, such as utility lines, other equipment, other workers, or falling objects. Coordinate machine actions with other activities, positioning or moving loads in response to hand or audio signals from crew members. Signal operators to guide movement of tractor-drawn machines. Locate underground services, such as pipes or wires, prior to beginning work. Align machines, cutterheads, or depth gauges with reference stakes and guidelines or ground or position equipment, following hand signals of other workers. Repair and maintain equipment, making emergency adjustments or assisting with major repairs as necessary. Connect hydraulic hoses, belts, mechanical linkages, or power takeoff shafts to tractors. Operate compactors, scrapers, or rollers to level, compact, or cover refuse at disposal grounds. Operate loaders to pull out stumps, rip asphalt or concrete, rough-grade properties, bury refuse, or perform general cleanup. Operate road watering, oiling, or rolling equipment, or street sealing equipment, such as chip spreaders. Compile cost estimates for jobs. Operate tractors or bulldozers to perform such tasks as clearing land, mixing sludge, trimming backfills, or building roadways or parking lots. Operate conveyors to remove grit and debris from digesters. Select and fasten bulldozer blades or other attachments to tractors, using hitches. Test atmosphere for adequate oxygen or explosive conditions when working in confined spaces. Turn valves to control air or water output of compressors or pumps. Drive tractor-trailer trucks to move equipment from site to site. Operate equipment to demolish or remove debris or to remove snow from streets, roads, or parking lots. Push other equipment when extra traction or assistance is required. Perform specialized work, using equipment such as pile drivers, dredging rigs, drillers, or concrete pumpers.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Back Hoe Operator
Engineering Equipment Operator
Equipment Operator
Heavy Equipment Operator
Loader Operator
Machine Operator
Motor Grader Operator
Operating Engineer
Operator
Track Hoe Operator

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Operations Research Analysts

Formulate and apply mathematical modeling and other optimizing methods to develop and interpret information that assists management with decision making, policy formulation, or other managerial functions. May collect and analyze data and develop decision support software, service, or products. May develop and supply optimal time, cost, or logistics networks for program evaluation, review, or implementation.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Break systems into their components, assign numerical values to each component, and examine the mathematical relationships between them. Perform validation and testing of models to ensure adequacy and reformulate models as necessary. Study and analyze information about alternative courses of action to determine which plan will offer the best outcomes. Observe the current system in operation and gather and analyze information about each of the parts of component problems, using a variety of sources. Collaborate with others in the organization to ensure successful implementation of chosen problem solutions. Analyze information obtained from management to conceptualize and define operational problems. Define data requirements and gather and validate information, applying judgment and statistical tests. Formulate mathematical or simulation models of problems, relating constants and variables, restrictions, alternatives, conflicting objectives, and their numerical parameters. Present the results of mathematical modeling and data analysis to management or other end users. Collaborate with senior managers and decision makers to identify and solve a variety of problems and to clarify management objectives. Develop and apply time and cost networks to plan, control, and review large projects. Design, conduct, and evaluate experimental operational models in cases where models cannot be developed from existing data. Prepare management reports defining and evaluating problems and recommending solutions. Educate staff in the use of mathematical models. Specify manipulative or computational methods to be applied to models. Develop business methods and procedures, including accounting systems, file systems, office systems, logistics systems, and production schedules.

License: License Not Required.

Outlook: Very Good

Alabama Employment Outlook

<table>
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<th>Alabama Projections</th>
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<td><strong>Annual Growth Rate:</strong> 2.70%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Advanced Analytics Associate
- Analytical Strategist
- Business Analytics Director
- Business Insight and Analytics Manager
- Decision Analyst
- Operations Research Analyst
- Operations Research Director
- Operations Research Group Manager
- Operations Research Manager
- Optimization Analyst

Post-Secondary Institutions with Programs
- Auburn University
- Faulkner University
- The University of Alabama
- Tuskegee University

For an explanation on omitted data, see the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Ophthalmic Medical Technicians

Assist ophthalmologists by performing ophthalmic clinical functions. May administer eye exams, administer eye medications, and instruct the patient in care and use of corrective lenses.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Administer topical ophthalmic or oral medications. Conduct tonometry or tonography tests to measure intraocular pressure. Measure visual acuity, including near, distance, pinhole, or dynamic visual acuity, using appropriate tests. Take and document patients' medical histories. Operate ophthalmic equipment, such as autorefractors, phoropters, tomographs, or retinoscopes. Measure and record lens power, using lensometers. Maintain ophthalmic instruments or equipment. Assist patients to select eyewear. Take anatomical or functional ocular measurements of the eye or surrounding tissue, such as axial length measurements. Conduct ocular motility tests to measure function of eye muscles. Clean or sterilize ophthalmic or surgical instruments. Assist physicians in performing ophthalmic procedures, including surgery. Call patients to inquire about their post-operative status or recovery. Conduct visual field tests to measure field of vision. Measure corneal curvature with keratometers or ophthalmometers to aid in the diagnosis of conditions, such as astigmatism. Assess refractive conditions of eyes, using retinoscopes. Conduct binocular disparity tests to assess depth perception. Instruct patients in the care and use of contact lenses. Assist patients to insert or remove contact lenses. Adjust or make minor repairs to spectacles or eyeglasses.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

Alabama Wage Data

<table>
<thead>
<tr>
<th></th>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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Alabama Projections

<table>
<thead>
<tr>
<th></th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td></td>
<td>510</td>
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<tr>
<td>Average Total Openings</td>
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<tr>
<td>Annual Growth Rate</td>
<td></td>
<td>1.26%</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Certified Ophthalmic Assistant
Certified Ophthalmic Medical Technician
Certified Ophthalmic Technician
Certified Ophthalmic Technician with Surgical Assisting
Certified Ophthalmic Technician-Surgical Assistant (COT-SA)
Ophthalmic Assistant
Ophthalmic Medical Assistant
Ophthalmic Medical Technician
Ophthalmic Technician
Surgical Coordinator

Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
Opticians, Dispensing
Design, measure, fit, and adapt lenses and frames for client according to written optical prescription or specification. Assist client with inserting, removing, and caring for contact lenses. Assist client with selecting frames. Measure customer for size of eyeglasses and coordinate frames with facial and eye measurements and optical prescription. Prepare work order for optical laboratory containing instructions for grinding and mounting lenses in frames. Verify exactness of finished lens spectacles. Adjust frame and lens position to fit client. May shape or reshape frames. Includes contact lens opticians.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Sell goods such as contact lenses, spectacles, sunglasses, and other goods related to eyes in general. Heat, shape, or bend plastic or metal frames to adjust eyeglasses to fit clients, using pliers and hands. Recommend specific lenses, lens coatings, and frames to suit client needs. Measure clients' bridge and eye size, temple length, vertex distance, pupillary distance, and optical centers of eyes, using measuring devices. Instruct clients in how to wear and care for eyeglasses. Assist clients in selecting frames according to style and color, and ensure that frames are coordinated with facial and eye measurements and optical prescriptions. Maintain records of customer prescriptions, work orders, and payments. Evaluate prescriptions in conjunction with clients' vocational and avocational visual requirements. Determine clients' current lens prescriptions, when necessary, using lensometers or lens analyzers and clients' eyeglasses. Verify that finished lenses are ground to specifications. Show customers how to insert, remove, and care for their contact lenses. Perform administrative duties such as tracking inventory and sales, submitting patient insurance information, and performing simple bookkeeping. Prepare work orders and instructions for grinding lenses and fabricating eyeglasses. Assemble eyeglasses by cutting and edging lenses, and fitting the lenses into frames. Obtain a customer's previous record, or verify a prescription with the examining optometrist or ophthalmologist. Fabricate lenses to meet prescription specifications. Arrange and maintain displays of optical merchandise. Repair damaged frames. Order and purchase frames and lenses. Grind lens edges, or apply coatings to lenses. Supervise the training of student opticians.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<td>Entry</td>
<td>Entry</td>
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<td>$16.89</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Certified Optician
Contact Lens Technician
Dispensing Optician
Licensed Dispensing Optician (LDO)
Licensed Optician
Ophthalmic Dispenser
Optical Technician
Optician
Optometric Assistant
Optometric Technician

Post-Secondary Institutions with Programs
John C Calhoun State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-1041  Optometrists
Diagnose, manage, and treat conditions and diseases of the human eye and visual system. Examine eyes and visual system, diagnose problems or impairments, prescribe corrective lenses, and provide treatment. May prescribe therapeutic drugs to treat specific eye conditions.

Education:  Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT:  None

Tasks:  Examine eyes, using observation, instruments and pharmaceutical agents, to determine visual acuity and perception, focus and coordination and to diagnose diseases and other abnormalities such as glaucoma or color blindness. Prescribe, supply, fit and adjust eyeglasses, contact lenses and other vision aids. Analyze test results and develop a treatment plan. Educate and counsel patients on contact lens care, visual hygiene, lighting arrangements and safety factors. Consult with and refer patients to ophthalmologist or other health care practitioner if additional medical treatment is determined necessary. Prescribe therapeutic procedures to correct or conserve vision. Prescribe medications to treat eye diseases if state laws permit. Provide patients undergoing eye surgeries, such as cataract and laser vision correction, with pre- and post-operative care. Remove foreign bodies from the eye. Provide vision therapy and low vision rehabilitation.

License:  Examination Fee: $500.00 License Renewal Fee: $160.00

Outlook:  Good

Alabama Employment Outlook

<table>
<thead>
<tr>
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<th>Alabama Projections</th>
</tr>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
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<td>$31.95</td>
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<td>$61.91</td>
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Related Occupations
Chief, Optometry Service
Doctor of Optometry (OD)
Eye Clinic Manager
Independent Contractor
Optometrist
Optometrist, Owner
Optometrist, President/Practice Owner
Optometrist/Practice Owner

Post-Secondary Institutions with Programs
University of Alabama at Birmingham

For an explanation on omitted data, see the Missing Data section in the introduction.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
49-3053 Outdoor Power Equipment and Other Small Engine Mechanics

Diagnose, adjust, repair, or overhaul small engines used to power lawn mowers, chain saws, recreational sporting equipment and related equipment.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Obtain problem descriptions from customers, and prepare cost estimates for repairs. Dismantle engines, using hand tools, and examine parts for defects. Adjust points, valves, carburetors, distributors, and spark plug gaps, using feeler gauges. Show customers how to maintain equipment. Test and inspect engines to determine malfunctions, to locate missing and broken parts, and to verify repairs, using diagnostic instruments. Record repairs made, time spent, and parts used. Repair and maintain gasoline engines used to power equipment such as portable saws, lawn mowers, generators, and compressors. Repair or replace defective parts such as magnetos, water pumps, gears, pistons, and carburetors, using hand tools. Perform routine maintenance such as cleaning and oiling parts, honing cylinders, and tuning ignition systems. Sell parts and equipment. Reassemble engines after repair or maintenance work is complete. Replace motors. Grind, ream, rebore, and re-tap parts to obtain specified clearances, using grinders, lathes, taps, reamers, boring machines, and micrometers. Remove engines from equipment, and position and bolt engines to repair stands.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

Alabama Wage Data

<table>
<thead>
<tr>
<th>Hourly Wage</th>
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<td>Entry</td>
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<tr>
<td>Average</td>
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Alabama Projections

<table>
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<tr>
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<td>Average Total Openings:</td>
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</tr>
<tr>
<td>Annual Growth Rate:</td>
<td>0.72%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

- Chainsaw Technician
- Golf Cart Mechanic
- Lawnmower Repair Mechanic
- Mechanic
- Outdoor Power Equipment Service Technician
- Service Technician (Service Tech)
- Shop Mechanic
- Small Engine Mechanic
- Small Engine Technician

Post-Secondary Institutions with Programs

- George C Wallace Community College - Dothan

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Packaging and Filling Machine Operators and Tenders
Operate or tend machines to prepare industrial or consumer products for storage or shipment. Includes canny workers who pack food products.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Count and record finished and rejected packaged items. Remove finished packaged items from machine and separate rejected items. Stack finished packaged items, or wrap protective material around each item, and pack the items in cartons or containers. Clean packaging containers, line and pad crates, or assemble cartons to prepare for product packing. Attach identification labels to finished packaged items, or cut stencils and stencil information on containers, such as lot numbers or shipping destinations. Stock and sort product for packaging or filling machine operation, and replenish packaging supplies, such as wrapping paper, plastic sheet, boxes, cartons, glue, ink, or labels. Inspect and remove defective products and packaging material. Sort, grade, weigh, and inspect products, verifying and adjusting product weight or measurement to meet specifications. Stop or reset machines when malfunctions occur, clear machine jams, and report malfunctions to a supervisor. Monitor the production line, watching for problems such as pile-ups, jams, or glue that isn’t sticking properly. Observe machine operations to ensure quality and conformity of filled or packaged products to standards. Secure finished packaged items by hand tying, sewing, gluing, stapling, or attaching fastener. Clean and remove damaged or otherwise inferior materials to prepare raw products for processing. Regulate machine flow, speed, or temperature. Package the product in the form in which it will be sent out, for example, filling bags with flour from a chute or spout. Start machine by engaging controls. Clean, oil, and make minor adjustments or repairs to machinery and equipment, such as opening valves or setting guides. Supply materials to spindles, conveyors, hoppers, or other feeding devices and unload packaged product. Tend or operate machine that packages product. Adjust machine components and machine tension and pressure according to size or processing angle of product.

**License:** License Not Required.

**Outlook:** Satisfactory

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### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
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<td>Experienced</td>
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</table>

**Average Total Openings:** 445  
**Annual Growth Rate:** 0.65%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

A-Operator  
Bundler  
Closing Machine Operator  
Computer Numerical Control Machine Operator (CNC)  
Machine Operator  
Fabrication Technician  
Filler Operator  
Machine Operator  
Packaging Operator  
Packing Attendant  
Packing Machine Operator

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
Pack or package by hand a wide variety of products and materials.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Clean containers, materials, supplies, or work areas, using cleaning solutions and hand tools. Record product, packaging, and order information on specified forms and records. Remove completed or defective products or materials, placing them on moving equipment, such as conveyors, or in specified areas, such as loading docks. Examine and inspect containers, materials, and products to ensure that packing specifications are met. Place or pour products or materials into containers, using hand tools and equipment, or fill containers from spouts or chutes. Obtain, move, and sort products, materials, containers, and orders, using hand tools. Transport packages to customers’ vehicles. Measure, weigh, and count products and materials. Assemble, line, and pad cartons, crates, and containers, using hand tools. Seal containers or materials, using glues, fasteners, nails, and hand tools. Mark and label containers, container tags, or products, using marking tools. Load materials and products into package processing equipment.

**License:** License Not Required.

**Outlook:** Satisfactory

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### Alabama Employment Outlook

#### Alabama Wage Data

<table>
<thead>
<tr>
<th>Hourly Wage</th>
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<td>$17,850</td>
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<td></td>
<td>$24,240</td>
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<td>$27,430</td>
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#### Alabama Projections

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<tr>
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</table>

**Average Total Openings:** 1,235

**Annual Growth Rate:** 0.64%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Bagger
- Inspector Packer
- Mini Shifter
- Pack Out Operator
- Packager
- Packer
- Picker and Packer
- Sacker
- Selector Packer
- Shipping Clerk

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Painters, Construction and Maintenance

Paint walls, equipment, buildings, bridges, and other structural surfaces, using brushes, rollers, and spray guns. May remove old paint to prepare surface prior to painting. May mix colors or oils to obtain desired color or consistency.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Fill cracks, holes, or joints with caulk, putty, plaster, or other fillers, using caulking guns or putty knives. Cover surfaces with dropcloths or masking tape and paper to protect surfaces during painting. Read work orders or receive instructions from supervisors or homeowners to determine work requirements. Smooth surfaces, using sandpaper, scrapers, brushes, steel wool, or sanding machines. Apply primers or sealers to prepare new surfaces, such as bare wood or metal, for finish coats. Calculate amounts of required materials and estimate costs, based on surface measurements or work orders. Polish final coats to specified finishes. Mix and match colors of paint, stain, or varnish with oil or thinning and drying additives to obtain desired colors and consistencies. Apply paint, stain, varnish, enamel, or other finishes to equipment, buildings, bridges, or other structures, using brushes, spray guns, or rollers. Wash and treat surfaces with oil, turpentine, mildew remover, or other preparations, and sand rough spots to ensure that finishes will adhere properly. Erect scaffolding or swing gates, or set up ladders, to work above ground level. Select and purchase tools or finishes for surfaces to be covered, considering durability, ease of handling, methods of application, and customers’ wishes. Remove fixtures such as pictures, door knobs, lamps, or electric switch covers prior to painting. Remove old finishes by stripping, sanding, wire brushing, burning, or using water or abrasive blasting. Waterproof buildings, using waterproofers or caulking. Bake finishes on painted or enameled articles, using baking ovens. Use special finishing techniques such as sponging, ragging, layering, or faux finishing. Cut stencils and brush or spray lettering or decorations on surfaces. Spray or brush hot plastics or pitch onto surfaces.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td><strong>Hourly Wage</strong></td>
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<td>Entry</td>
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<td>$12.92</td>
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<tr>
<td>$19.53</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Facilities Painter
- Foreman
- Highway Painter
- House Painter
- Industrial Painter
- Journeyman Painter
- Maintenance Painter
- Painter
- Painter Foreman
- Senior Painter

**Post-Secondary Institutions with Programs**
- No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Painters, Transportation Equipment
Operate or tend painting machines to paint surfaces of transportation equipment, such as automobiles, buses, trucks, trains, boats, and airplanes. Includes painters in auto body repair facilities.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Operate lifting or moving devices to move equipment or materials to access areas to be painted. Clean equipment and work areas. Remove accessories, such as chrome or mirrors, from vehicles and mask other surfaces with tape or paper to protect them from paint. Dispose of hazardous waste in an appropriate manner. Apply rust-resistant undercoats and caulk and seal seams. Sand and apply sealer to properly dried vehicle finish. Monitor painting operations to identify flaws, such as blisters or streaks, and correct their causes. Select paint according to company requirements and match paint colors, following specified color charts. Mix paints to match color specifications or vehicles’ original colors, stirring or thinning paints, using spatulas or power mixing equipment. Fill small dents or scratches with body fillers and smooth surfaces to prepare vehicles for painting. Allow the sprayed product to dry and touch up any missed spots. Disassemble, clean, and reassemble sprayers or power equipment, using solvents, wire brushes, and cloths. Remove grease, dirt, paint, or rust from vehicle surfaces in preparation for paint application, using abrasives, solvents, brushes, blowtorches, washing tanks, or sandblasters. Pour paint into spray guns and adjust nozzles and paint mixes for proper paint flow and coating thickness. Sand vehicle surfaces between coats of paint or primer to remove flaws and enhance adhesion for subsequent coats. Set up portable equipment, such as ventilators, exhaust units, ladders, or scaffolding. Verify paint consistency, using a viscosity meter. Adjust controls on infrared ovens, heat lamps, portable ventilators, or exhaust units to speed the drying of vehicles between coats. Use brush to hand-paint areas in need of retouching or unreachable with a spray gun. Spray prepared surfaces with specified amounts of primers and decorative or finish coatings. Select the correct spray gun system for the material being applied. Apply primer over any repairs made to vehicle surfaces. Buff and wax the finished paintwork. Apply designs, lettering, or other identifying or decorative items to finished products, using paint brushes or paint sprayers. Lay out logos, symbols, or designs on painted surfaces, according to blueprint specifications, using measuring instruments, stencils, or patterns.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$15.05</td>
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<tr>
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<td>$20.24</td>
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<tr>
<td>Experienced</td>
<td>$22.84</td>
<td>$47,500</td>
<td>155</td>
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Related Occupations
- Auto Painter (Automobile Painter)
- Auto Refinisher (Automobile Refinisher)
- Automotive Paint Technician (Auto Paint Technician)
- Automotive Painter
- Automotive Refinish Technician
- Body Technician/Painter
- Finish Painter
- Paint Prepper
- Paint Technician
- Top Coater

Post-Secondary Institutions with Programs
- Bevill State Community College
- Bishop State Community College
- Gadsden State Community College
- George C Wallace Community College - Dothan
- H Councill Trenholm State Technical College
- J F Ingram State Technical College
- Jefferson State Community College
- John C Calhoun State Community College
- Lawson State Community College - Birmingham
- Northwest-Shoals Community College - Muscle Shoals
- Reid State Technical College
- Shelton State Community College
- Southern Union State Community College
- Wallace State Community College - Hanceville

For an explanation on omitted data, see the Missing Data section in the introduction.
Paralegals and Legal Assistants

Assist lawyers by investigating facts, preparing legal documents, or researching legal precedent. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Meet with clients and other professionals to discuss details of case. Gather and analyze research data, such as statutes, decisions, and legal articles, codes, and documents. Prepare affidavits or other documents, such as legal correspondence, and organize and maintain documents in paper or electronic filing system. Prepare legal documents, including briefs, pleadings, appeals, wills, contracts, and real estate closing statements. File pleadings with court clerk. Direct and coordinate law office activity, including delivery of subpoenas. Investigate facts and law of cases and search pertinent sources, such as public records and internet sources, to determine causes of action and to prepare cases. Keep and monitor legal volumes to ensure that law library is up-to-date. Call upon witnesses to testify at hearing. Prepare for trial by performing tasks such as organizing exhibits. Arbitrate disputes between parties and assist in the real estate closing process, such as by reviewing title searches. Appraise and inventory real and personal property for estate planning.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
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<tbody>
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<td>Experienced</td>
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<td>$52,230</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

Certified Paralegal
Corporate Law Assistant
Law Associate
Legal Analyst
Legal Assistant
Litigation Paralegal
Paralegal
Paralegal Assistant
Paralegal Specialist
Real Estate Paralegal

### Post-Secondary Institutions with Programs

Brown Mackie College-Birmingham
Enterprise State Community College
Gadsden State Community College
George C Wallace State Community College-Hanceville
Herzing University-Birmingham
James H Faulkner State Community College
Samford University
South University-Montgomery

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Paving, Surfacing, and Tamping Equipment Operators

Operate equipment used for applying concrete, asphalt, or other materials to road beds, parking lots, or airport runways and taxiways, or equipment used for tamping gravel, dirt, or other materials. Includes concrete and asphalt paving machine operators, form tampers, tamping machine operators, and stone spreader operators.

Education: These occupations typically require less than a high school diploma - or the equivalent.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Inspect, clean, maintain, and repair equipment, using mechanics' hand tools, or report malfunctions to supervisors. Operate machines to spread, smooth, level, or steel-reinforce stone, concrete, or asphalt on road beds. Drive machines onto truck trailers, and drive trucks to transport machines and material to and from job sites. Observe distribution of paving material to adjust machine settings or material flow, and indicate low spots for workers to add material. Start machine, engage clutch, and push and move levers to guide machine along forms or guidelines and to control the operation of machine attachments. Operate tamping machines or manually roll surfaces to compact earth fills, foundation forms, and finished road materials, according to grade specifications. Set up and tear down equipment. Light burners or start heating units of machines, and regulate screed temperatures and asphalt flow rates. Coordinate truck dumping. Set up forms and lay out guidelines for curbs, according to written specifications, using string, spray paint, and concrete or water mixes. Shovel blacktop. Control paving machines to push dump trucks and to maintain a constant flow of asphalt or other material into hoppers or screeds. Fill tanks, hoppers, or machines with paving materials. Operate machines that clean or cut expansion joints in concrete or asphalt and that rout out cracks in pavement. Operate oil distributors, loaders, chip spreaders, dump trucks, and snow plows. Control traffic. Place strips of material, such as cork, asphalt, or steel into joints, or place rolls of expansion-joint material on machines that automatically insert material. Install dies, cutters, and extensions to screeds onto machines, using hand tools. Cut or break up pavement and drive guardrail posts, using machines equipped with interchangeable hammers. Drive and operate curbing machines to extrude concrete or asphalt curbing.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
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<td>$19.98</td>
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</table>

Entry Average Experienced

$24,780 $35,960 $41,550

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Asphalt Paver Operator
- Asphalt Raker
- Equipment Operator (EO)
- Heavy Equipment Operator
- Maintenance Equipment Operator (MEO)
- Operator
- Paver Operator
- Roller Operator
- Screed Operator
- Truck Driver

Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Personal Care Aides

Assist the elderly, convalescents, or persons with disabilities with daily living activities at the person's home or in a care facility. Duties performed at a place of residence may include keeping house (making beds, doing laundry, washing dishes) and preparing meals. May provide assistance at non-residential care facilities. May advise families, the elderly, convalescents, and persons with disabilities regarding such things as nutrition, cleanliness, and household activities.

Education: These occupations typically require a high school diploma.
OJT: None
Tasks: Plan, shop for, or prepare nutritious meals or assist families in planning, shopping for, or preparing nutritious meals. Perform housekeeping duties, such as cooking, cleaning, washing clothes or dishes, or running errands. Provide clients with communication assistance, typing their correspondence or obtaining information for them. Prepare and maintain records of client progress and services performed, reporting changes in client condition to manager or supervisor. Instruct or advise clients on issues such as household cleanliness, utilities, hygiene, nutrition, or infant care. Care for individuals or families during periods of incapacitation, family disruption, or convalescence, providing companionship, personal care, or help in adjusting to new lifestyles. Perform healthcare-related tasks, such as monitoring vital signs and medication, under the direction of registered nurses or physiotherapists. Train family members to provide bedside care. Administer bedside or personal care, such as ambulation or personal hygiene assistance. Transport clients to locations outside the home, such as to physicians' offices or on outings, using a motor vehicle. Participate in case reviews, consulting with the team caring for the client, to evaluate the client's needs and plan for continuing services.
License: License Not Required.
Outlook: Very Good

Alabama Employment Outlook

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<thead>
<tr>
<th>Hourly Wage</th>
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<tr>
<td>Experienced</td>
<td>$9.29</td>
</tr>
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</table>

2016 Estimated Employment: 15,870
2026 Projected Employment: 20,570
Average Total Openings: 3,020
Annual Growth Rate: 2.63%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Caregiver
- Certified Nursing Assistant (CNA)
- Home Care Aide
- Home Health Care Provider
- Medication Aide
- Patient Care Assistant (PCA)
- Personal Care Aide
- Personal Care Assistant (PCA)
- Personal Care Attendant (PCA)
- Resident Care Assistant (RCA)

Post-Secondary Institutions with Programs
- Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
13-2052 Personal Financial Advisors
Advise clients on financial plans using knowledge of tax and investment strategies, securities, insurance, pension plans, and real estate. Duties include assessing clients' assets, liabilities, cash flow, insurance coverage, tax status, and financial objectives.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Monitor financial market trends to ensure that client plans are responsive. Analyze financial information obtained from clients to determine strategies for meeting clients' financial objectives. Recruit and maintain client bases. Investigate available investment opportunities to determine compatibility with client financial plans. Interview clients to determine their current income, expenses, insurance coverage, tax status, financial objectives, risk tolerance, or other information needed to develop a financial plan. Recommend to clients strategies in cash management, insurance coverage, investment planning, or other areas to help them achieve their financial goals. Manage client portfolios, keeping client plans up-to-date. Answer clients' questions about the purposes and details of financial plans and strategies. Implement financial planning recommendations or refer clients to someone who can assist them with plan implementation. Open accounts for clients and disburse funds from accounts to creditors as agent for clients. Prepare or interpret for clients information such as investment performance reports, financial document summaries, or income projections. Explain to clients the personal financial advisor's responsibilities and the types of services to be provided. Guide clients in the gathering of information, such as bank account records, income tax returns, life and disability insurance records, pension plans, or wills. Recommend financial products, such as stocks, bonds, mutual funds, or insurance. Review clients' accounts and plans regularly to determine whether life changes, economic changes, environmental concerns, or financial performance indicate a need for plan reassessment. Inform clients about tax benefits, government rebates, or other financial benefits of alternative fuel vehicle purchases or energy efficient home construction, improvements, or remodeling. Contact clients periodically to determine any changes in their financial status.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<td>2016 Estimated Employment:</td>
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<td></td>
<td>Average Total Openings:</td>
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<tr>
<td>Hourly Wage</td>
<td>Entry</td>
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<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Account Executive
Analyst
Certified Financial Planner (CFP)
Financial Advisor
Financial Consultant
Financial Counselor
Financial Planner
Investment Advisor
Portfolio Manager
Registered Representative

Post-Secondary Institutions with Programs
Alabama A & M University
Alabama State University
Auburn University
Auburn University - Montgomery
Columbia Southern University
Jacksonville State University
Oakwood University
Samford University
The University of Alabama
Troy University
Tuskegee University
University of Alabama - Birmingham
University of Alabama - Huntsville
University of Montevallo
University of North Alabama
University of South Alabama
University of West Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Pest Control Workers

Apply or release chemical solutions or toxic gases and set traps to kill or remove pests and vermin that infest buildings and surrounding areas.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Record work activities performed. Recommend treatment and prevention methods for pest problems to clients. Clean work site after completion of job. Set mechanical traps or place poisonous paste or bait in sewers, burrows, or ditches. Spray or dust chemical solutions, powders, or gases into rooms, onto clothing, furnishings, or wood, or over marshlands, ditches, or catch basins. Drive truck equipped with power spraying equipment. Inspect premises to identify infestation source and extent of damage to property, wall, or roof porosity and access to infested locations. Study preliminary reports or diagrams of infested area and determine treatment type required to eliminate and prevent recurrence of infestation. Direct or assist other workers in treatment or extermination processes to eliminate or control rodents, insects, or weeds. Clean and remove blockages from infested areas to facilitate spraying procedures and provide drainage, using brooms, mops, shovels, or rakes. Measure area dimensions requiring treatment, calculate fumigant requirements, and estimate cost for service. Post warning signs and lock building doors to secure area to be fumigated. Position and fasten edges of tarpaulins over building and tape vents to ensure air-tight environment and check for leaks. Dig up and burn, or spray weeds with herbicides. Cut or bore openings in building or surrounding concrete, access infested areas, insert nozzle, and inject pesticide to impregnate ground.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
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<td>Hourly Wage</td>
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<tr>
<td>Experienced</td>
<td>$19.51</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Certified Pest Control Technician
Commercial Pest Control Technician
Exterminator
Pest Control Applicator
Pest Control Chemical Technician
Pest Control Operator
Pest Control Technician
Pest Technician
Residential Pest Control Technician
Termite Technician

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Pesticide Handlers, Sprayers, and Applicators, Vegetation

Mix or apply pesticides, herbicides, fungicides, or insecticides through sprays, dusts, vapors, soil incorporation, or chemical application on trees, shrubs, lawns, or botanical crops. Usually requires specific training and State or Federal certification.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Clean or service machinery to ensure operating efficiency, using water, gasoline, lubricants, or hand tools. Connect hoses and nozzles selected according to terrain, distribution pattern requirements, types of infestations, and velocities. Fill sprayer tanks with water and chemicals, according to formulas. Mix pesticides, herbicides, or fungicides for application to trees, shrubs, lawns, or botanical crops. Lift, push, and swing nozzles, hoses, and tubes to direct spray over designated areas. Cover areas to specified depths with pesticides, applying knowledge of weather conditions, droplet sizes, elevation-to-distance ratios, and obstructions. Start motors and engage machinery, such as sprayer agitators or pumps or portable spray equipment. Provide driving instructions to truck drivers to ensure complete coverage of designated areas, using hand and horn signals. Identify lawn or plant diseases to determine the appropriate course of treatment. Plant grass with seed spreaders and operate straw blowers to cover seeded areas with mixtures of asphalt and straw.

License: Examination Fee: $75.00 Professional Service Permit Annual Renewal Fee: $175.00 (plus $100.00 per category of work performed) Private Applicator Permit Fee: $25.00 Private Applicator Application Fee: $20.00

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
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<tbody>
<tr>
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<td>2016 Estimated Employment: 520</td>
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<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Experienced</td>
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</table>

Average Total Openings: 70
Annual Growth Rate: 0.74%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Chemical Applicator
Integrated Pest Management Technician (IPM Technician)
Lawn Specialist
Lawn Technician
Licensed Pesticide Applicator
Pest Control Technician
Pesticide Applicator
Spray Applicator
Spray Technician
Tree and Shrub Technician

Post-Secondary Institutions with Programs
James H Faulkner State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Pharmacy Technicians

Prepare medications under the direction of a pharmacist. May measure, mix, count out, label, and record amounts and dosages of medications according to prescription orders.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Answer telephones, responding to questions or requests. Receive written prescription or refill requests and verify that information is complete and accurate. Prepack bulk medicines, fill bottles with prescribed medications, and type and affix labels. Prepare and process medical insurance claim forms and records. Assist customers by answering simple questions, locating items, or referring them to the pharmacist for medication information. Price and file prescriptions that have been filled. Operate cash registers to accept payment from customers. Receive and store incoming supplies, verify quantities against invoices, check for outdated medications in current inventory, and inform supervisors of stock needs and shortages. Maintain proper storage and security conditions for drugs. Compute charges for medication or equipment dispensed to hospital patients and enter data in computer. Clean and help maintain equipment or work areas and sterilize glassware, according to prescribed methods. Price stock and mark items for sale. Establish or maintain patient profiles, including lists of medications taken by individual patients. Deliver medications or pharmaceutical supplies to patients, nursing stations, or surgery. Supply and monitor robotic machines that dispense medicine into containers and label the containers. Order, label, and count stock of medications, chemicals, or supplies and enter inventory data into computer. Restock intravenous (IV) supplies and add measured drugs or nutrients to IV solutions under sterile conditions to prepare IV packs for various uses, such as chemotherapy medication. Maintain and merchandise home healthcare products or services. Transfer medication from vials to the appropriate number of sterile, disposable syringes, using aseptic techniques. Mix pharmaceutical preparations, according to written prescriptions.

**License:** Application for Examination Fee: $60.00 Background Fee: $40.00 Renewal Fee: $60.00

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Accredited Pharmacy Technician
- Billing and Quality Technician
- Certified Pharmacy Technician (CPhT)
- Compounding Technician
- Lead Pharmacy Tech, Certified Pharmacy Technician (Lead Pharmacy Tech, CPhT)
- Lead Pharmacy Technician (Lead Pharmacy Tech)
- Pharmacy Technician (Pharmacy Tech)
- Senior Pharmacy Technician
- Technician
- Technician, Inventory Specialist

**Post-Secondary Institutions with Programs**

- Fortis College
- Fortis College-Dothan
- Fortis College-Montgomery
- George C Wallace State Community College-Hanceville
- Remington College-Mobile Campus
- Ross Medical Education Center-Huntsville

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Phlebotomists

Draw blood for tests, transfusions, donations, or research. May explain the procedure to patients and assist in the recovery of patients with adverse reactions.

**Education:**
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:**
Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
Draw blood from veins by vacuum tube, syringe, or butterfly venipuncture methods. Match laboratory requisition forms to specimen tubes. Document route of specimens from collection to laboratory analysis and diagnosis. Enter patient, specimen, insurance, or billing information into computer. Dispose of contaminated sharps, in accordance with applicable laws, standards, and policies. Dispose of blood or other biohazard fluids or tissue, in accordance with applicable laws, standards, or policies. Organize or clean blood-drawing trays, ensuring that all instruments are sterile and all needles, syringes, or related items are of first-time use. Transport specimens or fluid samples from collection sites to laboratories. Determine donor suitability, according to interview results, vital signs, and medical history. Calibrate or maintain machines, such as those used for plasma collection. Draw blood from arteries, using arterial collection techniques. Provide sample analysis results to physicians to assist diagnosis. Monitor blood or plasma donors during and after procedures to ensure health, safety, and comfort. Serve refreshments to donors to ensure absorption of sugar into their systems. Draw blood from capillaries by dermal puncture, such as heel or finger stick methods. Explain fluid or tissue collection procedures to patients. Conduct hemoglobin tests to ensure donor iron levels are normal. Collect specimens at specific time intervals for tests, such as those assessing therapeutic drug levels. Perform saline flushes or dispense anticoagulant drugs, such as Heparin, through intravenous (IV) lines, in accordance with licensing restrictions and under the direction of a medical doctor. Conduct standards tests, such as blood alcohol, blood culture, oral glucose tolerance, glucose screening, blood smears, or peak and trough drug levels tests. Collect fluid or tissue samples, using appropriate collection procedures. Process blood or other fluid samples for further analysis by other medical professionals. Train other medical personnel in phlebotomy or laboratory techniques. Administer subcutaneous or intramuscular injects, in accordance with licensing restrictions.

**License:**
License Not Required.

**Outlook:**
Very Good

### Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
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<tr>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Lab Asst
- Patient Service Technician PST
- Phlebotomist
- Phlebotomist Supervisor/Instructor
- Phlebotomist, Medical Lab Assistant
- Phlebotomy Director
- Phlebotomy Program Coordinator
- Phlebotomy Supervisor
- Registered Phlebotomist-Part Time

**Post-Secondary Institutions with Programs**
- Fortis College - Montgomery

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Physical Therapist Aides

Under close supervision of a physical therapist or physical therapy assistant, perform only delegated, selected, or routine tasks in specific situations. These duties include preparing the patient and the treatment area.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Clean and organize work area and disinfect equipment after treatment. Record treatment given and equipment used. Measure patient's range-of-joint motion, body parts, or vital signs to determine effects of treatments or for patient evaluations. Instruct, motivate, safeguard, or assist patients practicing exercises or functional activities, under direction of medical staff. Participate in patient care tasks, such as assisting with passing food trays, feeding residents, or bathing residents on bed rest. Change linens, such as bed sheets and pillow cases. Maintain equipment or furniture to keep it in good working condition, including performing the assembly or disassembly of equipment or accessories. Administer active or passive manual therapeutic exercises, therapeutic massage, or heat, light, sound, water, or electrical modality treatments, such as ultrasound. Observe patients during treatment to compile and evaluate data on patients' responses and progress and report to physical therapist. Schedule patient appointments with physical therapists and coordinate therapists' schedules. Fit patients for orthopedic braces, prostheses, or supportive devices, adjusting fit as needed. Confer with physical therapy staff or others to discuss and evaluate patient information for planning, modifying, or coordinating treatment. Perform clerical duties, such as taking inventory, ordering supplies, answering telephone, taking messages, or filling out forms. Arrange treatment supplies to keep them in order. Secure patients into or onto therapy equipment. Transport patients to and from treatment areas, using wheelchairs or providing standing support. Train patients to use orthopedic braces, prostheses, or supportive devices. Administer traction to relieve neck or back pain, using intermittent or static traction equipment. Assist patients to dress, undress, or put on and remove supportive devices, such as braces, splints, or slings.

**License:** License Not Required.

**Outlook:** Very Good

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<tbody>
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<td><strong>Hourly Wage</strong></td>
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<td>$9.10 Entry</td>
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</table>

**2016 Estimated Employment:** 590

**2026 Projected Employment:** 740

**Average Total Openings:** 95

**Annual Growth Rate:** 2.29%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.

**Related Occupations**

- Clinical Rehabilitation Aide
- Physical Therapist Aide (PTA)
- Physical Therapist Technician (Physical Therapy Tech)
- Physical Therapy Aide (PTA)
- Physical Therapy Attendant
- Physical Therapy Technician
- Rehabilitation Aide
- Rehabilitation Attendant
- Restorative Aide (RA)
- Restorative Care Technician
Physical Therapist Assistants

Assist physical therapists in providing physical therapy treatments and procedures. May, in accordance with State laws, assist in the development of treatment plans, carry out routine functions, document the progress of treatment, and modify specific treatments in accordance with patient status and within the scope of treatment plans established by a physical therapist. Generally requires formal training.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Instruct, motivate, safeguard, and assist patients as they practice exercises or functional activities. Observe patients during treatments to compile and evaluate data on their responses and progress and provide results to physical therapist in person or through progress notes. Perform clerical duties, such as taking inventory, ordering supplies, answering telephone, taking messages, or filling out forms. Administer active or passive manual therapeutic exercises, therapeutic massage, aquatic physical therapy, or heat, light, sound, or electrical modality treatments, such as ultrasound. Confer with physical therapy staff or others to discuss and evaluate patient information for planning, modifying, or coordinating treatment. Clean work area and check and store equipment after treatment. Secure patients into or onto therapy equipment. Transport patients to and from treatment areas, lifting and transferring them according to positioning requirements. Measure patients' range-of-joint motion, body parts, or vital signs to determine effects of treatments or for patient evaluations. Communicate with or instruct caregivers or family members on patient therapeutic activities or treatment plans. Assist patients to dress, undress, or put on and remove supportive devices, such as braces, splints, or slings. Fit patients for orthopedic braces, prostheses, or supportive devices, such as crutches. Monitor operation of equipment and record use of equipment and administration of treatment. Train patients in the use of orthopedic braces, prostheses, or supportive devices. Prepare treatment areas and electrotherapy equipment for use by physiotherapists. Perform postural drainage, percussions, or vibrations or teach deep breathing exercises to treat respiratory conditions. Administer traction to relieve neck or back pain, using intermittent or static traction equipment. Attend or conduct continuing education courses, seminars, or in-service activities.

License: Application Fee: $150.00 Renewal Fee: $93.00 Expired Renewal Fee: $193.00 Restoration Fee: $50.00

Outlook: Very Good

Alabama Employment Outlook

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<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
</tr>
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<tr>
<td>Entry</td>
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<td>Average</td>
<td>$26.45</td>
<td>$55,020</td>
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<tr>
<td>Experienced</td>
<td>$29.85</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Certified Physical Therapist Assistant (CPTA)
- Home Health Physical Therapist Assistant
- Licensed Physical Therapist Assistant (LPTA)
- Outpatient Physical Therapist Assistant
- Per Diem Physical Therapist Assistant (Per Diem PTA)
- Physical Therapist Assistant (PTA)
- Physical Therapist Assistant and Nurse Aide
- Physical Therapy Assistant (PTA)
- Physical Therapy Technician (Physical Therapy Tech)
- Staff Physical Therapy Assistant

Post-Secondary Institutions with Programs
- Bishop State Community College
- George C Wallace Community College-Dothan
- George C Wallace State Community College-Hanceville
- Jefferson State Community College
- John C Calhoun State Community College
- South University-Montgomery
Physical Therapists
Assess, plan, organize, and participate in rehabilitative programs that improve mobility, relieve pain, increase strength, and improve or correct disabling conditions resulting from disease or injury.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Plan, prepare, or carry out individually designed programs of physical treatment to maintain, improve, or restore physical functioning, alleviate pain, or prevent physical dysfunction in patients. Record prognosis, treatment, response, and progress in patient's chart or enter information into computer. Evaluate effects of treatment at various stages and adjust treatments to achieve maximum benefit. Discharge patient from physical therapy when goals or projected outcomes have been attained and provide for appropriate follow-up care or referrals. Administer manual exercises, massage, or traction to help relieve pain, increase patient strength, or decrease or prevent deformity or crippling. Confer with the patient, medical practitioners, or appropriate others to plan, implement, or assess the intervention program. Direct, supervise, assess, and communicate with supportive personnel. Identify and document goals, anticipated progress, and plans for reevaluation. Perform and document an initial exam, evaluating data to identify problems and determine a diagnosis prior to intervention. Provide information to the patient about the proposed intervention, its material risks and expected benefits, and any reasonable alternatives. Instruct patient and family in treatment procedures to be continued at home. Test and measure patient's strength, motor development and function, sensory perception, functional capacity, or respiratory or circulatory efficiency and record data. Obtain patients' informed consent to proposed interventions. Refer clients to community resources or services. Review physician's referral and patient's medical records to help determine diagnosis and physical therapy treatment required. Administer treatment involving application of physical agents, using equipment, moist packs, ultraviolet or infrared lamps, or ultrasound machines. Provide educational information about physical therapy or physical therapists, injury prevention, ergonomics, or ways to promote health. Inform patients and refer to appropriate practitioners when diagnosis reveals findings outside physical therapy. Conduct or support research and apply research findings to practice. Evaluate, fit, or adjust prosthetic or orthotic devices or recommend modification to orthotist. Direct group rehabilitation activities. Construct, maintain, or repair medical supportive devices. Teach physical therapy students or those in other health professions. Participate in community or community agency activities or help to formulate public policy.

License: Application Fee: $150.00 Renewal Fee: $130.00 Expired Renewal Fee: $230.00 Restoration Fee: $50.00

Outlook: Very Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$30.13</td>
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<td>Experienced</td>
<td>$48.66</td>
<td>$101,200</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Chief Physical Therapist
Home Care Physical Therapist
Outpatient Physical Therapist
Pediatric Physical Therapist
Per Diem Physical Therapist
Physical Therapist (PT)
Physical Therapist, Director of Rehabilitation
Registered Physical Therapist (RPT)
Rehabilitation Services Director
Staff Physical Therapist (Staff PT)

Post-Secondary Institutions with Programs
Alabama State University
University of Alabama at Birmingham
University of South Alabama
Physician Assistants

Provide healthcare services typically performed by a physician, under the supervision of a physician. Conduct complete physicals, provide treatment, and counsel patients. May, in some cases, prescribe medication. Must graduate from an accredited educational program for physician assistants.

**Education:**
Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:**
Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
Examine patients to obtain information about their physical condition. Make tentative diagnoses and decisions about management and treatment of patients. Obtain, compile and record patient medical data, including health history, progress notes and results of physical examination. Prescribe therapy or medication with physician approval. Instruct and counsel patients about prescribed therapeutic regimens, normal growth and development, family planning, emotional problems of daily living, and health maintenance. Administer or order diagnostic tests, such as x-ray, electrocardiogram, and laboratory tests. Interpret diagnostic test results for deviations from normal. Supervise and coordinate activities of technicians and technical assistants. Provide physicians with assistance during surgery or complicated medical procedures. Visit and observe patients on hospital rounds or house calls, updating charts, ordering therapy, and reporting back to physician. Perform therapeutic procedures, such as injections, immunizations, suturing and wound care, and infection management. Order medical and laboratory supplies and equipment.

**License:**
Application Fee: $200.00 Annual Renewal: $100.00 (due by December 31) Background Fee: $65.00 Physician Certification Fee: $100.00

**Outlook:**
Excellent

### Alabama Employment Outlook

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
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<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$34.10</td>
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<td>$54.95</td>
<td>$114,290</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Certified Physician Assistant (PA-C)
- Clinical Physician Assistant
- Family Practice Physician Assistant
- General Surgery Physician Assistant
- Midlevel Provider
- Orthopaedic Physician Assistant
- Physician Assistant Certified (PAC)
- Physician Extender
- Physician's Assistant
- Surgical Physician Assistant

### Post-Secondary Institutions with Programs

- Oakwood University
- University of Alabama at Birmingham
- University of South Alabama
Physicists

Conduct research into physical phenomena, develop theories on the basis of observation and experiments, and devise methods to apply physical laws and theories.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Direct testing and monitoring of contamination of radioactive equipment, and recording of personnel and plant area radiation exposure data. Conduct application evaluations and analyze results to determine commercial, industrial, scientific, medical, military, or other uses for electro-optical devices. Develop theories and laws on the basis of observation and experiments, and apply these theories and laws to problems in areas such as nuclear energy, optics, and aerospace technology. Develop manufacturing, assembly, and fabrication processes of lasers, masers, infrared, and other light-emitting and light-sensitive devices. Analyze data from research conducted to detect and measure physical phenomena. Perform complex calculations as part of the analysis and evaluation of data, using computers. Conduct research pertaining to potential environmental impacts of atomic energy-related industrial development to determine licensing qualifications. Observe the structure and properties of matter, and the transformation and propagation of energy, using equipment such as masers, lasers, and telescopes to explore and identify the basic principles governing these phenomena. Collaborate with other scientists in the design, development, and testing of experimental, industrial, or medical equipment, instrumentation, and procedures. Design computer simulations to model physical data so that it can be better understood. Describe and express observations and conclusions in mathematical terms. Teach physics to students. Develop standards of permissible concentrations of radioisotopes in liquids and gases. Advise authorities of procedures to be followed in radiation incidents or hazards, and assist in civil defense planning. Report experimental results by writing papers for scientific journals or by presenting information at scientific conferences.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
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</thead>
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<tr>
<td><strong>Hourly Wage</strong></td>
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<td>Entry</td>
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<tr>
<td>$78.00</td>
<td>$162,240</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Biophysics Scientist
Health Physicist
Physicist
Research Consultant
Research Physicist
Research Scientist
Scientist

Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Operate mechanized equipment, such as pickup trucks, rollers, tandem dump trucks, front-end loaders, or backhoes. Grade or level trench bases, using tamping machines or hand tools. Lay out pipe routes, following written instructions or blueprints and coordinating layouts with supervisors. Dig trenches to desired or required depths, by hand or using trenching tools. Cut pipes to required lengths. Cover pipes with earth or other materials. Tap and drill holes into pipes to introduce auxiliary lines or devices. Connect pipe pieces and seal joints, using welding equipment, cement, or glue. Check slopes for conformance to requirements, using levels or lasers. Align and position pipes to prepare them for welding or sealing. Install or use instruments such as lasers, grade rods, or transit levels. Install or repair sanitary or stormwater sewer structures or pipe systems. Train or supervise others in laying pipe. Locate existing pipes needing repair or replacement, using magnetic or radio indicators.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<td></td>
<td>Hourly Wage</td>
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<tr>
<td>Entry</td>
<td>$11.29</td>
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<tr>
<td>Average</td>
<td>$16.13</td>
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<tr>
<td>Experienced</td>
<td>$18.56</td>
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</table>

2026 Projected Employment: 2,880
Average Total Openings: 305
Annual Growth Rate: 0.68%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Construction Laborer
Equipment Operator
Heavy Equipment Operator
Machine Operator
Pipe Crew Foreman
Pipe Foreman
Pipeplacer
Skilled Laborer
Tailman
Waste Water Worker

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
47-2152 Plumbers, Pipefitters, and Steamfitters

Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gases. May install heating and cooling equipment and mechanical control systems. Includes sprinklerfitters.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Cut, thread, or hammer pipes to specifications, using tools such as saws, cutting torches, pipe threaders, or pipe benders. Lay out full scale drawings of pipe systems, supports, or related equipment, according to blueprints. Assemble or secure pipes, tubes, fittings, or related equipment, according to specifications, by welding, brazing, cementing, soldering, or threading joints. Measure and mark pipes for cutting or threading. Inspect, examine, or test installed systems or pipe lines, using pressure gauge, hydrostatic testing, observation, or other methods. Plan pipe system layout, installation, or repair, according to specifications. Attach pipes to walls, structures, or fixtures, such as radiators or tanks, using brackets, clamps, tools, or welding equipment. Modify, clean, or maintain pipe systems, units, fittings, or related machines or equipment, using hand or power tools. Select pipe sizes, types, or related materials, such as supports, hangers, or hydraulic cylinders, according to specifications. Cut or bore holes in structures, such as bulkheads, decks, walls, or mains, prior to pipe installation, using hand or power tools. Install automatic controls to regulate pipe systems. Shut off steam, water, or other gases or liquids from pipe sections, using valve keys or wrenches. Remove and replace worn components. Inspect work sites for obstructions or holes that could cause structural weakness. Install fixtures, appliances, or equipment designed to reduce water or energy consumption. Install pipe systems to support alternative energy-fueled systems, such as geothermal heating or cooling systems. Install or test gray water systems, such as recycling, treatment, or irrigation systems. Prepare cost estimates for clients. Operate motorized pumps to remove water from flooded manholes, basements, or facility floors. Dip nonferrous piping materials in a mixture of molten tin and lead to obtain a coating that prevents erosion or galvanic or electrolytic action.

License: Apprentice Registration and Card Fee: $25.00 Master Exam Fee: $160.00 Journeyman Exam Fee: $110.00 Master Card Fee: $150.00 (annual) Journeyman Card Fee: $50.00 (annual) Medical Gas Renewal Fee: $25.00 Examination Review Fee: $98.00

Outlook: Good

Alabama Employment Outlook

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<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>-----------------</td>
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<tr>
<td>Entry</td>
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<tr>
<td>Experienced</td>
<td>$23.62</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Rough Carpenters
- Forest and Conservation Workers
- Maintenance and Repair Workers, General
- Drywall and Ceiling Tile Installers
- Pipe Fitters and Steamfitters
- Heating and Air Conditioning Mechanics and Installers
- Automotive Master Mechanics
- Electricians
- Construction Carpenters
- Medical Equipment Repairers

Post-Secondary Institutions with Programs
- Bishop State Community College
- J F Ingram State Technical College
- Lawson State Community College-Birmingham Campus

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
43-5031 Police, Fire, and Ambulance Dispatchers
Operate radio, telephone, or computer equipment at emergency response centers. Receive reports from the public of crimes, disturbances, fires, and medical or police emergencies. Relay information to law enforcement and emergency response personnel. May maintain contact with caller until responders arrive.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Record details of calls, dispatches, and messages. Question callers to determine their locations, and the nature of their problems to determine type of response needed. Determine response requirements and relative priorities of situations, and dispatch units in accordance with established procedures. Scan status charts and computer screens, and contact emergency response field units to determine emergency units available for dispatch. Receive incoming telephone or alarm system calls regarding emergency and non-emergency police and fire service, emergency ambulance service, information, and after-hours calls for departments within a city. Answer routine inquiries, and refer calls not requiring dispatches to appropriate departments and agencies. Enter, update, and retrieve information from teletype networks and computerized data systems regarding such things as wanted persons, stolen property, vehicle registration, and stolen vehicles. Monitor various radio frequencies such as those used by public works departments, school security, and civil defense to keep apprised of developing situations. Relay information and messages to and from emergency sites, to law enforcement agencies, and to all other individuals or groups requiring notification. Observe alarm registers and scan maps to determine whether a specific emergency is in the dispatch service area. Maintain access to, and security of, highly sensitive materials. Read and effectively interpret small-scale maps and information from a computer screen to determine locations and provide directions. Maintain files of information relating to emergency calls, such as personnel rosters, and emergency call-out and pager files. Provide emergency medical instructions to callers. Monitor alarm systems to detect emergencies, such as fires and illegal entry into establishments. Test and adjust communication and alarm systems, and report malfunctions to maintenance units. Operate and maintain mobile dispatch vehicles and equipment. Learn material and pass required tests for certification.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<th></th>
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<td></td>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td></td>
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<td>Experienced</td>
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<td>$36,870</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
911 Dispatcher
Communications Officer
Communications Operator
Communications Specialist
Communications Supervisor
Dispatcher
Emergency Communications Operator (ECO)
Police Dispatcher
Public Safety Dispatcher
Telecommunicator

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Preschool Teachers, Except Special Education

Instruct preschool-aged children in activities designed to promote social, physical, and intellectual growth needed for primary school in preschool, day care center, or other child development facility. May be required to hold State certification.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: None

Tasks: Prepare materials and classrooms for class activities. Assimilate arriving children to the school environment by greeting them, helping them remove outerwear, and selecting activities of interest to them. Enforce all administration policies and rules governing students. Plan and conduct activities for a balanced program of instruction, demonstration, and work time that provides students with opportunities to observe, question, and investigate. Provide a variety of materials and resources for children to explore, manipulate, and use, both in learning activities and in imaginative play. Adapt teaching methods and instructional materials to meet students' varying needs and interests. Teach basic skills, such as color, shape, number and letter recognition, personal hygiene, and social skills. Read books and demonstrate activities. Attend to children's basic needs by feeding them, dressing them, and changing their diapers. Maintain accurate and complete student records as required by laws, district policies, and administrative regulations. Organize and label materials and display students' work in a manner appropriate for their ages and perceptual skills. Arrange indoor and outdoor space to facilitate creative play, motor-skill activities, and safety. Organize and lead activities designed to promote physical, mental, and social development, such as games, arts and crafts, music, storytelling, and field trips. Establish clear objectives for all lessons, units, and projects and communicate those objectives to children. Identify children showing signs of emotional, developmental, or health-related problems. Discuss them with appropriate people. Supervise, evaluate, and plan assignments for teacher assistants and volunteers.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
</tbody>
</table>

| Average Total Openings: | **385** |
| Annual Growth Rate:   | **0.73%** |

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Early Childhood Teacher
Group Teacher
Head Start Teacher
Headstart Teacher
Lead Teacher
Pre-Kindergarten Teacher (Pre-K Teacher)
Preschool Teacher
Teacher
Teacher Assistant
Toddler Teacher

Post-Secondary Institutions with Programs
Bевill State Community College
Bishop State Community College
Chattahoochee Valley Community College
Concordia College Alabama
Enterprise State Community College
Gadsden State Community College
George C Wallace Community College
H Councill Trenholm State Community College
James H Faulkner State Community College
Jefferson State Community College
John C Calhoun State Community College
Lawson State Community College-Birmingham Campus
Lurleen B Wallace Community College
North East Alabama Community College
Northwest-Shoals Community College
Reid State Technical College
Shelton State Community College
Snead State Community College
Southern Union State Community College
Spring Hill College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
33-9021 Private Detectives and Investigators

Gather, analyze, compile and report information regarding individuals or organizations to clients, or detect occurrences of unlawful acts or infractions of rules in private establishment.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Write reports or case summaries to document investigations. Search computer databases, credit reports, public records, tax or legal filings, or other resources to locate persons or to compile information for investigations. Conduct private investigations on a paid basis. Question persons to obtain evidence for cases of divorce, child custody, or missing persons or information about individuals' character or financial status. Expose fraudulent insurance claims or stolen funds. Conduct personal background investigations, such as pre-employment checks, to obtain information about an individual's character, financial status, or personal history. Obtain and analyze information on suspects, crimes, or disturbances to solve cases, to identify criminal activity, or to gather information for court cases. Monitor industrial or commercial properties to enforce conformance to establishment rules and to protect people or property. Confer with establishment officials, security departments, police, or postal officials to identify problems, provide information, or receive instructions. Observe and document activities of individuals to detect unlawful acts or to obtain evidence for cases, using binoculars and still or video cameras. Alert appropriate personnel to suspects' locations. Investigate companies' financial standings or locate funds stolen by embezzlers, using accounting skills. Count cash and review transactions, sales checks, or register tapes to verify amounts or to identify shortages. Perform undercover operations, such as evaluating the performance or honesty of employees by posing as customers or employees. Apprehend suspects and release them to law enforcement authorities or security personnel. Testify at hearings or court trials to present evidence. Warn troublemakers causing problems on establishment premises and eject them from premises when necessary.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
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<tr>
<td>Entry</td>
<td>$15.31</td>
<td>$31,840</td>
<td>320</td>
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<td>$26.72</td>
<td>$55,580</td>
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<td>Experienced</td>
<td>$32.43</td>
<td>$67,440</td>
<td>35</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Asset Protection Detective
Field Investigator
Investigator
Loss Prevention Agent
Loss Prevention Associate
Loss Prevention Detective
Loss Prevention Investigator
Loss Prevention Officer
Private Investigator
Special Investigator

Post-Secondary Institutions with Programs

Central Alabama Community College
Chattahoochee Valley Community College
Columbia Southern University
Enterprise State Community College
Gadsden State Community College
George C Wallace Community College - Dothan
George C Wallace Community College - Selma
Jefferson State Community College
John C Calhoun State Community College
Lawson State Community College - Birmingham
Northeast Alabama Community College
Northwest-Shoals Community College - Muscle Shoals
Wallace State Community College - Hanceville

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Probation Officers and Correctional Treatment Specialists

Provide social services to assist in rehabilitation of law offenders in custody or on probation or parole. Make recommendations for actions involving formulation of rehabilitation plan and treatment of offender, including conditional release and education and employment stipulations.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Prepare and maintain case folder for each assigned inmate or offender. Arrange for medical, mental health, or substance abuse treatment services according to individual needs or court orders. Administer drug and alcohol tests, including random drug screens of offenders, to verify compliance with substance abuse treatment programs. Gather information about offenders' backgrounds by talking to offenders, their families and friends, and other people who have relevant information. Interview probationers and parolees regularly to evaluate their progress in accomplishing goals and maintaining the terms specified in their probation contracts and rehabilitation plans. Develop rehabilitation programs for assigned offenders or inmates, establishing rules of conduct, goals, and objectives. Participate in decisions about whether cases should go before courts and which court should hear them. Investigate alleged parole violations, using interviews, surveillance, and search and seizure. Arrange for postrelease services, such as employment, housing, counseling, education, and social activities. Recommend remedial action or initiate court action in response to noncompliance with terms of probation or parole. Develop and prepare packets containing information about social service agencies, assistance organizations, and programs that might be useful for inmates or offenders. Develop liaisons and networks with other parole officers, community agencies, correctional institutions, psychiatric facilities, and aftercare agencies to plan for helping offenders with life adjustments. Inform offenders or inmates of requirements of conditional release, such as office visits, restitution payments, or educational and employment stipulations. Supervise people on community-based sentences, such as electronically monitored home detention, and provide field supervision of probationers by conducting curfew checks or visits to home, work, or school. Discuss with offenders how such issues as drug and alcohol abuse and anger management problems might have played roles in their criminal behavior. Identify and approve work placements for offenders with community service sentences. Write reports describing offenders' progress. Assess the suitability of penitentiary inmates for release under parole and statutory release programs and submit recommendations to parole boards. Provide offenders or inmates with assistance in matters concerning detainers, sentences in other jurisdictions, writs, and applications for social assistance. Recommend appropriate penitentiary for initial placement of an offender. Conduct prehearing and presentencing investigations and testify in court regarding offenders' backgrounds and recommended sentences and sentencing conditions.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tbody>
<tr>
<td>Hourly Wage</td>
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<td>Entry</td>
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<tr>
<td>$22.13</td>
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<tr>
<td>$25.29</td>
<td>$52,610</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Adult Probation Officer
- Correctional Counselor
- Deputy Juvenile Officer
- Deputy Probation Officer (DPO)
- Juvenile Probation Officer
- Parole Agent
- Parole Officer
- Probation and Parole Officer
- Probation Counselor
- Probation Officer

Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Production, Planning, and Expediting Clerks

Coordinate and expedite the flow of work and materials within or between departments of an establishment according to production schedule. Duties include reviewing and distributing production, work, and shipment schedules; conferring with department supervisors to determine progress of work and completion dates; and compiling reports on progress of work, inventory levels, costs, and production problems.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks:
- Distribute production schedules or work orders to departments. Confer with department supervisors or other personnel to assess progress and discuss needed changes.
- Review documents, such as production schedules, work orders, or staffing tables, to determine personnel or materials requirements or material priorities. Record production data, including volume produced, consumption of raw materials, or quality control measures.
- Examine documents, materials, or products and monitor work processes to assess completeness, accuracy, and conformance to standards and specifications. Compile information, such as production rates and progress, materials inventories, materials used, or customer information, so that status reports can be completed. Calculate figures, such as required amounts of labor or materials, manufacturing costs, or wages, using pricing schedules, adding machines, calculators, or computers. Arrange for delivery, assembly, or distribution of supplies or parts to expedite flow of materials and meet production schedules. Requisition and maintain inventories of materials or supplies necessary to meet production demands. Revise production schedules when required due to design changes, labor or material shortages, backlogs, or other interruptions, collaborating with management, marketing, sales, production, or engineering. Compile and prepare documentation related to production sequences, transportation, personnel schedules, or purchase, maintenance, or repair orders. Confer with establishment personnel, vendors, or customers to coordinate production or shipping activities and to resolve complaints or eliminate delays. Plan production commitments or timetables for business units, specific programs, or jobs, using sales forecasts. Provide documentation and information to account for delays, difficulties, or changes to cost estimates. Maintain files, such as maintenance records, bills of lading, or cost reports. Contact suppliers to verify shipment details. Establish and prepare product construction directions and locations and information on required tools, materials, equipment, numbers of workers needed, and cost projections.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>Entry</td>
<td>$13.56</td>
<td>$28,200</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
<td>$22.91</td>
<td>$47,660</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
<td>$27.59</td>
<td>$57,390</td>
</tr>
</tbody>
</table>

Average Total Openings: 305
Annual Growth Rate: 1.09%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Master Scheduler
- Material Coordinator
- Materials Planner
- Planner
- Production Assistant
- Production Clerk
- Production Controller
- Production Planner
- Production Scheduler
- Scheduler

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Psychiatric Technicians

Care for individuals with mental or emotional conditions or disabilities, following the instructions of physicians or other health practitioners. Monitor patients' physical and emotional well-being and report to medical staff. May participate in rehabilitation and treatment programs, help with personal hygiene, and administer oral or injectable medications.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Collaborate with or assist doctors, psychologists, or rehabilitation therapists in working with mentally ill, emotionally disturbed, or developmentally disabled patients to treat, rehabilitate, and return patients to the community. Issue medications from dispensary and maintain records in accordance with specified procedures. Aid patients in performing tasks, such as bathing or keeping beds, clothing, or living areas clean. Take and record measures of patients' physical condition, using devices such as thermometers or blood pressure gauges. Encourage patients to develop work skills and to participate in social, recreational, or other therapeutic activities that enhance interpersonal skills or develop social relationships. Provide nursing, psychiatric, or personal care to mentally ill, emotionally disturbed, or mentally retarded patients. Interview new patients to complete admission forms, to assess their mental health status, or to obtain their mental health and treatment history. Monitor patients' physical and emotional well-being and report unusual behavior or physical ailments to medical staff. Administer oral medications or hypodermic injections, following physician's prescriptions and hospital procedures. Lead prescribed individual or group therapy sessions as part of specific therapeutic procedures. Observe and influence patients' behavior, communicating and interacting with them and teaching, counseling, or befriending them. Develop or teach strategies to promote client wellness and independence. Escort patients to medical appointments. Restrain violent, potentially violent, or suicidal patients by verbal or physical means as required. Train or instruct new employees on procedures to follow with psychiatric patients. Contact patients' relatives to arrange family conferences.

License: Application Fee: $260.00 Annual License Renewal Fee: $180.00

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
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<td></td>
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<tr>
<td></td>
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<tr>
<td>Hourly Wage</td>
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<tr>
<td>Entry</td>
<td>$9.28 Entry $19,300</td>
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<tr>
<td>Average</td>
<td>$13.42 Average $27,910</td>
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<tr>
<td>Experienced</td>
<td>$15.49 Experienced $32,220</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Behavioral Health Technician
Health Care Technician
Licensed Psychiatric Technician (LPT)
Mental Health Assistant (MHA)
Mental Health Associate
Mental Health Specialist
Mental Health Technician (MHT)
Mental Health Worker
Psychiatric Technician (PT)
Residential Aide (RA)

Post-Secondary Institutions with Programs
Columbia Southern University
11-2031  Public Relations and Fundraising Managers

Plan, direct, or coordinate activities designed to create or maintain a favorable public image or raise issue awareness for their organization or client; or if engaged in fundraising, plan, direct, or coordinate activities to solicit and maintain funds for special projects or nonprofit organizations.

Education:  Most of these occupations typically require a four-year bachelor's degree.

OJT:  Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks:  Develop and maintain the company's corporate image and identity, which includes the use of logos and signage. Identify main client groups and audiences, determine the best way to communicate publicity information to them, and develop and implement a communication plan. Facilitate consumer relations or the relationship between parts of the company, such as the managers and employees, or different branch offices. Establish and maintain effective working relationships with clients, government officials, and media representatives and use these relationships to develop new business opportunities. Assign, supervise, and review the activities of public relations staff. Write interesting and effective press releases, prepare information for media kits, and develop and maintain company internet or intranet web pages. Establish goals for soliciting funds, develop policies for collection and safeguarding of contributions, and coordinate disbursement of funds. Design and edit promotional publications, such as brochures. Direct activities of external agencies, establishments, and departments that develop and implement communication strategies and information programs. Draft speeches for company executives and arrange interviews and other forms of contact for them. Respond to requests for information about employers' activities or status. Confer with labor relations managers to develop internal communications that keep employees informed of company activities. Manage communications budgets. Manage special events, such as sponsorship of races, parties introducing new products, or other activities the firm supports, to gain public attention through the media without advertising directly. Evaluate advertising and promotion programs for compatibility with public relations efforts. Produce films and other video products, regulate their distribution, and operate film library. Formulate policies and procedures related to public information programs, working with public relations executives. Manage in-house communication courses. Observe and report on social, economic, and political trends that might affect employers. Maintain company archives. Develop, implement, and maintain crisis communication plans.

License:  License Not Required.

Outlook:  Satisfactory

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
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<td>Average Total Openings: 50</td>
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<tr>
<td>$28.85</td>
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<td>$45.32</td>
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<tr>
<td>$53.56</td>
<td>Annual Growth Rate: 0.69%</td>
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<tr>
<td>Experienced</td>
<td>Annual Total Openings: 50</td>
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<td>$111,400</td>
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<td></td>
<td>Annual Growth Rate: 0.69%</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Account Executive
Account Supervisor
Annual Giving Director
Communications Director
Communications Manager
Community Relations Director
Development Director
Public Affairs Director
Public Relations Director
Public Relations Manager (PR Manager)

Post-Secondary Institutions with Programs

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Public Relations Specialists

Engage in promoting or creating an intended public image for individuals, groups, or organizations. May write or select material for release to various communications media.

**Education:**
Most of these occupations typically require a four-year bachelor's degree.

**OJT:**
Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
Respond to requests for information from the media or designate an appropriate spokesperson or information source. Confer with other managers to identify trends or key group interests or concerns or to provide advice on business decisions. Update and maintain content posted on the Web. Coach client representatives in effective communication with the public or with employees. Establish or maintain cooperative relationships with representatives of community, consumer, employee, or public interest groups. Write press releases or other media communications to promote clients. Prepare or edit organizational publications, such as employee newsletters or stockholders’ reports, for internal or external audiences. Confer with production or support personnel to produce or coordinate production of advertisements or promotions. Arrange public appearances, lectures, contests, or exhibits for clients to increase product or service awareness or to promote goodwill. Plan or direct development or communication of programs to maintain favorable public or stockholder perceptions of an organization's accomplishments, agenda, or environmental responsibility. Study the objectives, promotional policies, or needs of organizations to develop public relations strategies that will influence public opinion or promote ideas, products, or services. Develop plans or materials to communicate activities undertaken by organizations that are beneficial to the environment, public safety, or other important social issues. Coordinate public responses to environmental management incidents or conflicts. Consult with advertising agencies or staff to arrange promotional campaigns in all types of media for products, organizations, or individuals. Develop marketing campaigns for environmental technologies or services. Plan or conduct market or public opinion research to test products or determine potential for product success, communicating results to client or management. Purchase advertising space or time as required to promote client's product or agenda. Prepare or deliver speeches to further public relations objectives.

**License:**
License Not Required.

**Outlook:**
Satisfactory

### Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
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<td>Average</td>
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<tr>
<td>Experienced</td>
<td>$29.15</td>
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</table>

| **Average Total Openings:** 240 |
| **Annual Growth Rate:** 0.79% |

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Account Executive
- Communications Director
- Communications Specialist
- Corporate Communications Specialist
- Media Relations Specialist
- Public Affairs Specialist
- Public Information Officer
- Public Information Specialist
- Public Relations Coordinator
- Public Relations Specialist (PR Specialist)

**Post-Secondary Institutions with Programs**

- Alabama State University
- Auburn University
- Auburn University - Montgomery
- Huntingdon College
- Oakwood University
- Samford University
- Spring Hill College
- The University of Alabama
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of Mobile
- University of North Alabama
- University of South Alabama

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
11-3061 Purchasing Managers

Plan, direct, or coordinate the activities of buyers, purchasing officers, and related workers involved in purchasing materials, products, and services. Includes wholesale or retail trade merchandising managers and procurement managers.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Maintain records of goods ordered and received. Direct and coordinate activities of personnel engaged in buying, selling, and distributing materials, equipment, machinery, and supplies. Locate vendors of materials, equipment or supplies, and interview them to determine product availability and terms of sales. Administer online purchasing systems. Prepare and process requisitions and purchase orders for supplies and equipment. Resolve vendor or contractor grievances, and claims against suppliers. Develop cost reduction strategies and savings plans. Represent companies in negotiating contracts and formulating policies with suppliers. Participate in the development of specifications for equipment, products, or substitute materials. Control purchasing department budgets. Review purchase order claims and contracts for conformance to company policy. Analyze market and delivery systems to assess present and future material availability. Review, evaluate, and approve specifications for issuing and awarding bids. Develop and implement purchasing and contract management instructions, policies, and procedures. Prepare reports regarding market conditions and merchandise costs. Arrange for disposal of surplus materials. Prepare bid awards requiring board approval. Interview and hire staff, and oversee staff training.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<th>Alabama Projections</th>
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</thead>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$35.95</td>
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<td><strong>2026 Projected Employment:</strong></td>
<td><strong>1,080</strong></td>
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<tr>
<td><strong>Average Total Openings:</strong></td>
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<tr>
<td><strong>Annual Growth Rate:</strong></td>
<td><strong>1.08%</strong></td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Category Purchasing Manager
Commodity Manager
Materials Director
Materials Manager
Procurement Director
Procurement Manager
Procurement Officer
Purchasing Director
Purchasing Supervisor
Strategic Sourcing Director

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Radiation Therapists

Provide radiation therapy to patients as prescribed by a radiologist according to established practices and standards. Duties may include reviewing prescription and diagnosis; acting as liaison with physician and supportive care personnel; preparing equipment, such as immobilization, treatment, and protection devices; and maintaining records, reports, and files. May assist in dosimetry procedures and tumor localization.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 year, up to and including 2 years of work-related experience, on-the-job training and/or vocational training.

Tasks:
- Check radiation therapy equipment to ensure proper operation. Position patients for treatment with accuracy, according to prescription. Administer prescribed doses of radiation to specific body parts, using radiation therapy equipment according to established practices and standards. Follow principles of radiation protection for patient, self, and others. Enter data into computer and set controls to operate or adjust equipment or regulate dosage. Maintain records, reports, or files as required, including such information as radiation dosages, equipment settings, or patients' reactions. Review prescription, diagnosis, patient chart, and identification. Conduct most treatment sessions independently, in accordance with the long-term treatment plan and under the general direction of the patient's physician. Check for side effects, such as skin irritation, nausea, or hair loss to assess patients' reaction to treatment. Observe and reassure patients during treatment and report unusual reactions to physician or turn equipment off if unexpected adverse reactions occur. Implement appropriate follow-up care plans. Act as liaison with physicist and supportive care personnel. Educate, prepare, and reassure patients and their families by answering questions, providing physical assistance, and reinforcing physicians' advice regarding treatment reactions or post-treatment care. Help physicians, radiation oncologists, or clinical physicists to prepare physical or technical aspects of radiation treatment plans, using information about patient condition and anatomy. Photograph treated area of patient and process film. Schedule patients for treatment times. Prepare or construct equipment, such as immobilization, treatment, or protection devices. Train or supervise student or subordinate radiotherapy technologists. Provide assistance to other healthcare personnel during dosimetry procedures and tumor localization. Store, sterilize, or prepare the special applicators containing the radioactive substance implanted by the physician. Calculate actual treatment dosages delivered during each session. Assist in the preparation of sealed radioactive materials, such as cobalt, radium, cesium, or isotopes, for use in radiation treatments.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
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<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
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<td>$30.58</td>
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<td>Average</td>
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<td>Experienced</td>
<td>$42.54</td>
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<td>$440</td>
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<tr>
<td></td>
<td>$63,610</td>
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<tr>
<td></td>
<td>$88,470</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Chief Radiation Therapist (Chief RT)
- Computed Tomography Simulation Therapist (CT Simulation Therapist)
- Dosimetrist
- Lead Radiation Therapist
- Medical Dosimetrist
- Radiation Therapist
- Radiation Therapy Technologist (RTT)
- Registered Radiation Therapist
- Senior Radiation Therapist
- Staff Radiation Therapist

Post-Secondary Institutions with Programs
- Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Radiologic Technologists

Take x rays and CAT scans or administer nonradioactive materials into patient's blood stream for diagnostic purposes. Includes technologists who specialize in other scanning modalities.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Review and evaluate developed x-rays, video tape, or computer-generated information to determine if images are satisfactory for diagnostic purposes. Use radiation safety measures and protection devices to comply with government regulations and to ensure safety of patients and staff. Position imaging equipment and adjust controls to set exposure time and distance, according to specification of examination. Position and immobilize patient on examining table. Explain procedures and observe patients to ensure safety and comfort during scan. Operate or oversee operation of radiologic or magnetic imaging equipment to produce images of the body for diagnostic purposes. Set up examination rooms, ensuring that all necessary equipment is ready. Take thorough and accurate patient medical histories. Record, process, and maintain patient data or treatment records and prepare reports. Key commands and data into computer to document and specify scan sequences, adjust transmitters and receivers, or photograph certain images. Monitor video display of area being scanned and adjust density or contrast to improve picture quality. Coordinate work with clerical personnel or other technologists. Monitor patients' conditions and reactions, reporting abnormal signs to physician. Perform administrative duties, such as developing departmental operating budget, coordinating purchases of supplies or equipment, or preparing work schedules. Remove and process film. Prepare and administer oral or injected contrast media to patients. Assign duties to radiologic staff to maintain patient flows and achieve production goals. Collaborate with other medical team members, such as physicians or nurses, to conduct angiography or special vascular procedures. Operate fluoroscope to aid physician to view and guide wire or catheter through blood vessels to area of interest. Measure thickness of section to be radiographed, using instruments similar to measuring tapes. Perform scheduled maintenance or minor emergency repairs on radiographic equipment. Demonstrate new equipment, procedures, or techniques to staff and provide technical assistance.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<td>Hourly Wage</td>
<td>Entry</td>
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<tr>
<td></td>
<td>Average</td>
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<td></td>
<td>Experienced</td>
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<td></td>
<td>Average Total Openings:</td>
</tr>
<tr>
<td></td>
<td>Annual Growth Rate:</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Computed Tomography Technologist (CT Technologist)
Mammographer
Mammography Technologist
Radiographer
Radiologic Technologist (RT)
Radiological Technologist
Radiology Technologist
Staff Technologist
X-Ray Technologist (X-Ray Tech)

Post-Secondary Institutions with Programs

Gadsden State Community College
George C Wallace Community College-Dothan
George C Wallace State Community College-Hanceville
H Councill Trenholm State Community College
Jefferson State Community College
Southern Union State Community College
University of South Alabama

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Rail Car Repairers**

Diagnose, adjust, repair, or overhaul railroad rolling stock, mine cars, or mass transit rail cars.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Inspect the interior and exterior of rail cars coming into rail yards to identify defects and to determine the extent of wear and damage. Inspect components such as bearings, seals, gaskets, wheels, and coupler assemblies to determine if repairs are needed. Record conditions of cars, and repair and maintenance work performed or to be performed. Perform scheduled maintenance, and clean units and components. Test units for operability before and after repairs. Adjust repaired or replaced units as needed to ensure proper operation. Remove locomotives, car mechanical units, or other components, using pneumatic hoists and jacks, pinch bars, hand tools, and cutting torches. Repair or replace defective or worn parts such as bearings, pistons, and gears, using hand tools, torque wrenches, power tools, and welding equipment. Install and repair interior flooring, fixtures, walls, plumbing, steps, and platforms. Measure diameters of axle wheel seats, using micrometers, and mark dimensions on axles so that wheels can be bored to specified dimensions. Repair, fabricate, and install steel or wood fittings, using blueprints, shop sketches, and instruction manuals. Disassemble units such as water pumps, control valves, and compressors so that repairs can be made. Align car sides for installation of car ends and crossties, using width gauges, turnbuckles, and wrenches. Paint car exteriors, interiors, and fixtures. Repair car upholstery. Repair window sash frames, attach weather stripping and channels to frames, and replace window glass, using hand tools. Test electrical systems of cars by operating systems and using testing equipment such as ammeters. Examine car roofs for wear and damage, and repair defective sections, using roofing material, cement, nails, and waterproof paint. Repair and maintain electrical and electronic controls for propulsion and braking systems. Replace defective wiring and insulation, and tighten electrical connections, using hand tools.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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<th>2026 Projected Employment:</th>
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<th>Annual Growth Rate:</th>
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<tr>
<td>Entry</td>
<td>$12.03</td>
<td>Entry $25,020</td>
<td>600</td>
<td>650</td>
<td>0.80%</td>
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<td>$20.57</td>
<td>Average $42,790</td>
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<td></td>
</tr>
<tr>
<td>Experienced</td>
<td>$24.85</td>
<td>Experienced $51,680</td>
<td></td>
<td></td>
<td></td>
</tr>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Air Brake Mechanic
- Car Repairman
- Carman
- Rail Car Maintenance Mechanic
- Rail Car Mechanic
- Rail Car Painter/Sandblaster
- Rail Car Repairer
- Rail Car Repairman
- Rail Car Welder
- Railroad Car Repairman

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.
47-4061 Rail-Track Laying and Maintenance Equipment Operators

Lay, repair, and maintain track for standard or narrow-gauge railroad equipment used in regular railroad service or in plant yards, quarries, sand and gravel pits, and mines. Includes ballast cleaning machine operators and railroad bed tamping machine operators.

Education: These occupations typically require a high school diploma.

OJT: None

Tasks: Engage mechanisms that lay tracks or rails to specified gauges. Operate single- or multiple-head spike driving machines to drive spikes into ties and secure rails. Lubricate machines, change oil, or fill hydraulic reservoirs to specified levels. Operate single- or multiple-head spike pullers to pull old spikes from ties. Raise rails, using hydraulic jacks, to allow for tie removal and replacement. Operate track-wrench machines to tighten or loosen bolts at joints that hold ends of rails together. Clean, grade, or level ballast on railroad tracks. Patrol assigned track sections so that damaged or broken track can be located and reported. Cut rails to specified lengths, using rail saws. Clean or make minor repairs to machines or equipment. Adjust controls of machines that spread, shape, raise, level, or align track, according to specifications. Drill holes through rails, tie plates, or fishplates for insertion of bolts or spikes, using power drills. Repair or adjust track switches, using wrenches and replacement parts. Observe leveling indicator arms to verify levelness and alignment of tracks. Spray ties, fishplates, or joints with oil to protect them from weathering. Dress and reshape worn or damaged railroad switch points or frogs, using portable power grinders. Operate tie-adzing machines to cut ties and permit insertion of fishplates that hold rails. Clean tracks or clear ice or snow from tracks or switch boxes. Drive vehicles that automatically move and lay tracks or rails over sections of track to be constructed, repaired, or maintained. Push controls to close grasping devices on track or rail sections so that they can be raised or moved. Grind ends of new or worn rails to attain smooth joints, using portable grinders. Drive graders, tamping machines, brooms, or ballast spreading machines to redistribute gravel or ballast between rails. Turn wheels of machines, using lever controls, to adjust guidelines for track alignments or grades, following specifications. Weld sections of track together, such as switch points and frogs. String and attach wire-guidelines machine to rails so that tracks or rails can be aligned or leveled. Paint railroad signs, such as speed limits or gate-crossing warnings.

License: License Not Required.

Outlook: Very Good

Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$13.22</td>
<td>$27,500</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>$20.17</td>
<td>$41,960</td>
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<tr>
<td>$23.65</td>
<td>$49,180</td>
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<td>250</td>
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<td>310</td>
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<tr>
<td>Average Total Openings:</td>
<td>35</td>
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<tr>
<td>Annual Growth Rate:</td>
<td>2.17%</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Machine Operator
Rail Maintenance Worker
Track Equipment Operator (TEO)
Track Inspector
Track Laborer
Track Maintainer
Track Repairer
Track Supervisor
Track Walker
Trackman

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**Receptionists and Information Clerks**

Answer inquiries and provide information to the general public, customers, visitors, and other interested parties regarding activities conducted at establishment and location of departments, offices, and employees within the organization.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Operate telephone switchboard to answer, screen, or forward calls, providing information, taking messages, or scheduling appointments. Collect, sort, distribute, or prepare mail, messages, or courier deliveries. Schedule appointments and maintain and update appointment calendars. Greet persons entering establishment, determine nature and purpose of visit, and direct or escort them to specific destinations. Receive payment and record receipts for services. Analyze data to determine answers to questions from customers or members of the public. Perform duties, such as taking care of plants or straightening magazines to maintain lobby or reception area. Keep a current record of staff members' whereabouts and availability. Transmit information or documents to customers, using computer, mail, or facsimile machine. File and maintain records. Process and prepare memos, correspondence, travel vouchers, or other documents. Hear and resolve complaints from customers or the public. Provide information about establishment, such as location of departments or offices, employees within the organization, or services provided. Perform administrative support tasks, such as proofreading, transcribing handwritten information, or operating calculators or computers to work with pay records, invoices, balance sheets, or other documents. Take orders for merchandise or materials and send them to the proper departments to be filled. Calculate and quote rates for tours, stocks, insurance policies, or other products or services. Schedule space or equipment for special programs and prepare lists of participants. Enroll individuals to participate in programs and notify them of their acceptance. Conduct tours or deliver talks describing features of public facilities, such as a historic site or national park.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<td>2016 Estimated Employment: 14,740</td>
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<td>Experienced</td>
<td>$13.85</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

Clerk Specialist
Community Liaison
Front Desk Receptionist
Greeter
Member Service Representative
Office Assistant
Receptionist
Scheduler
Senior Receptionist
Unit Assistant

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.

---

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
39-9032  Recreation Workers
Conduct recreation activities with groups in public, private, or volunteer agencies or recreation facilities. Organize and promote activities, such as arts and crafts, sports, games, music, dramatics, social recreation, camping, and hobbies, taking into account the needs and interests of individual members.

Education:  Most of these occupations typically require a four-year bachelor’s degree.

OJT:  Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks:  Manage the daily operations of recreational facilities. Organize, lead, and promote interest in recreational activities, such as arts, crafts, sports, games, camping, and hobbies. Enforce rules and regulations of recreational facilities to maintain discipline and ensure safety. Supervise and coordinate the work activities of personnel, such as training staff members and assigning work duties. Schedule maintenance and use of facilities. Document individuals' progress toward meeting their treatment goals. Conduct individual in-room visits with residents. Develop treatment goals for individuals based on their assessments. Serve as liaison between park or recreation administrators and activity instructors. Complete and maintain time and attendance forms and inventory lists. Assess the needs and interests of individuals and groups and plan activities accordingly, given the available equipment or facilities. Explain principles, techniques, and safety procedures to participants in recreational activities and demonstrate use of materials and equipment. Greet new arrivals to activities, introducing them to other participants, explaining facility rules, and encouraging participation. Evaluate recreation areas, facilities, and services to determine if they are producing desired results. Oversee the purchase, planning, design, construction, and upkeep of recreation facilities and areas. Direct special activities or events, such as aquatics, gymnastics, or performing arts. Meet with staff to discuss rules, regulations, and work-related problems. Administer first aid according to prescribed procedures and notify emergency medical personnel when necessary. Confer with management to discuss and resolve participant complaints. Encourage participants to develop their own activities and leadership skills through group discussions. Evaluate staff performance, recording evaluations on appropriate forms. Provide for entertainment and set up related decorations and equipment. Meet and collaborate with agency personnel, community organizations, and other professional personnel to plan balanced recreational programs for participants. Take residents on community outings.

License:  License Not Required.

Outlook:  Satisfactory

Alabama Employment Outlook

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<td>Average Total Openings: 855</td>
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<td>$22,930</td>
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<td>Experienced</td>
<td>$25,780</td>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Activities Assistant
Activities Director
Activity Aide
Activity Assistant
Activity Coordinator
Activity Director
Program Assistant
Recreation Assistant
Recreation Coordinator
Recreation Supervisor

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide
See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Refuse and Recyclable Material Collectors
Collect and dump refuse or recyclable materials from containers into truck. May drive truck.

Education: These occupations typically require a high school diploma.
OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.
Tasks: Refuel trucks or add other fluids, such as oil or brake fluid. Organize schedules for refuse collection. Fill out defective equipment reports. Provide quotes for refuse collection contracts. Make special pickups of recyclable materials, such as food scraps, used oil, discarded computers, or other electronic items. Inspect trucks prior to beginning routes to ensure safe operating condition. Sort items set out for recycling into designated truck compartments. Tag garbage or recycling containers to inform customers of problems, such as excess garbage or inclusion of items that are not permitted. Drive trucks, following established routes, through residential streets or alleys or through business or industrial areas. Dump refuse or recyclable materials at disposal sites. Operate equipment that compresses collected refuse. Operate automated or semi-automated hoisting devices that raise refuse bins and dump contents into openings in truck bodies. Clean trucks or compactor bodies after routes have been completed. Communicate with dispatchers concerning delays, unsafe sites, accidents, equipment breakdowns, or other maintenance problems. Check road or weather conditions to determine how routes will be affected. Dismount garbage trucks to collect garbage and remount trucks to ride to the next collection point.

License: License Not Required.
Outlook: Satisfactory

Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tr>
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<tr>
<td>$16.91</td>
<td>$35,170</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
Driver
Front Load Trash Truck Driver
Garbage Collector
Garbage Man
Recycle Driver
Rolloff Truck Driver
Sanitation Laborer
Swamper
Trash Collector
Truck Driver

**Post-Secondary Institutions with Programs**
No postsecondary institutions with reported programs.
Registered Nurses

Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Licensing or registration required.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Perform administrative or managerial functions, such as taking responsibility for a unit's staff, budget, planning, or long-range goals. Refer students or patients to specialized health resources or community agencies furnishing assistance. Maintain accurate, detailed reports and records. Record patients' medical information and vital signs. Observe nurses and visit patients to ensure proper nursing care. Prepare rooms, sterile instruments, equipment, or supplies and ensure that stock of supplies is maintained. Work with individuals, groups, or families to plan or implement programs designed to improve the overall health of communities. Consult and coordinate with healthcare team members to assess, plan, implement, or evaluate patient care plans. Monitor, record, and report symptoms or changes in patients' conditions. Assess the needs of individuals, families, or communities, including assessment of individuals' home or work environments, to identify potential health or safety problems. Administer medications to patients and monitor patients for reactions or side effects. Direct or supervise less-skilled nursing or healthcare personnel or supervise a particular unit. Inform physician of patient's condition during anesthesia. Prescribe or recommend drugs, medical devices, or other forms of treatment, such as physical therapy, inhalation therapy, or related therapeutic procedures. Conduct specified laboratory tests. Monitor all aspects of patient care, including diet and physical activity. Instruct individuals, families, or other groups on topics such as health education, disease prevention, or childbirth and develop health improvement programs. Provide physical examinations, make tentative diagnoses, and treat patients en route to hospitals or at disaster site triage centers. Modify patient treatment plans as indicated by patients' responses and conditions.

License: Initial Application Fee for RN: $75.00 Biennial Renewal Fee for RN: $75.00

Outlook: Good

Alabama Employment Outlook

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<tr>
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<tbody>
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<td>Hourly Wage</td>
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<td>Entry</td>
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<td>Experienced</td>
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<tr>
<td>$31.29</td>
<td>$65,090</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Charge Nurse
Director of Nursing (DON)
Emergency Department RN (Emergency Department Registered Nurse)
Oncology RN (Oncology Registered Nurse)
Operating Room Registered Nurse (OR RN)
Public Health Nurse (PHN)
Registered Nurse (RN)
School Nurse
Staff Nurse
Staff RN (Staff Registered Nurse)

Post-Secondary Institutions with Programs
Auburn University
Auburn University Montgomery
Bevill State Community College
Bishop State Community College
Central Alabama Community College
Gadsden State Community College
Jefferson State Community College
Northwest Shoals Community College
Shelton State Community College
Southern Union State Community College
Samford University
The University of Alabama
Troy University
University of Alabama at Birmingham
University of North Alabama
University of South Alabama
University of West Alabama

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Rehabilitation Counselors
Counsel individuals to maximize the independence and employability of persons coping with personal, social, and vocational difficulties that result from birth defects, illness, disease, accidents, or the stress of daily life. Coordinate activities for residents of care and treatment facilities. Assess client needs and design and implement rehabilitation programs that may include personal and vocational counseling, training, and job placement.

### Education:
Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

### OJT:
Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

### Tasks:
- Prepare and maintain records and case files, including documentation such as clients' personal and eligibility information, services provided, narratives of client contacts, or relevant correspondence.
- Maintain close contact with clients during job training and placements to resolve problems and evaluate placement adequacy.
- Arrange for physical, mental, academic, vocational, and other evaluations to obtain information for assessing clients' needs and developing rehabilitation plans.
- Monitor and record clients' progress to ensure that goals and objectives are met.
- Develop rehabilitation plans that fit clients' aptitudes, education levels, physical abilities, and career goals.
- Participate in job development and placement programs, contacting prospective employers, placing clients in jobs, and evaluating the success of placements.
- Develop diagnostic procedures to determine clients' needs.
- Analyze information from interviews, educational and medical records, consultation with other professionals, and diagnostic evaluations to assess clients' abilities, needs, and eligibility for services.
- Confer with physicians, psychologists, occupational therapists, and other professionals to develop and implement client rehabilitation programs.
- Manage budgets and direct case service allocations, authorizing expenditures and payments.
- Locate barriers to client employment, such as inaccessible work sites, inflexible schedules, or transportation problems, and work with clients to develop strategies for overcoming these barriers.
- Develop and maintain relationships with community referral sources, such as schools or community groups.
- Confer with clients to discuss their options and goals so that rehabilitation programs and plans for accessing needed services can be developed.
- Collaborate with clients' families to implement rehabilitation plans, such as behavioral, residential, social, or employment goals.
- Collaborate with community agencies to establish facilities and programs for persons with disabilities.
- Arrange for on-site job coaching or assistive devices, such as specially equipped wheelchairs, to help clients adapt to work or school environments.

### License:
License Not Required.

### Outlook:
Satisfactory

### Alabama Employment Outlook

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<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>Entry</td>
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<tr>
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<tr>
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<tr>
<td>$22.12</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Case Manager
- Human Services Care Specialist
- Job Coach
- Program Coordinator
- Program Specialist
- Rehabilitation Counselor
- Rehabilitation Specialist
- Vocational Case Manager
- Vocational Placement Specialist
- Vocational Rehabilitation Counselor (VCR)

### Post-Secondary Institutions with Programs
- Alabama State University
- The University of Alabama
Reservation and Transportation Ticket Agents and Travel Clerks

Make and confirm reservations for transportation or lodging, or sell transportation tickets. May check baggage and direct passengers to designated concourse, pier, or track; deliver tickets, contact individuals and groups to inform them of package tours; or provide tourists with travel or transportation information.

Education: These occupations typically require less than a high school diploma - or the equivalent.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Examine passenger documentation to determine destinations and to assign boarding passes. Check baggage and cargo and direct passengers to designated locations for loading. Announce arrival and departure information, using public address systems. Confer with customers to determine their service requirements and travel preferences. Provide clients with assistance in preparing required travel documents and forms. Trace lost, delayed, or misdirected baggage for customers. Answer inquiries regarding information, such as schedules, accommodations, procedures, or policies. Determine whether space is available on travel dates requested by customers, assigning requested spaces when available. Assemble and issue required documentation, such as tickets, travel insurance policies, or itineraries. Provide boarding or disembarking assistance to passengers needing special assistance. Keep information facilities clean during operation. Inform clients of essential travel information, such as travel times, transportation connections, or medical and visa requirements. Prepare customer invoices and accept payment. Maintain computerized inventories of available passenger space and provide information on space reserved or available. Provide customers with travel suggestions and information sources, such as guides, directories, brochures, or maps. Open or close information facilities. Plan routes, itineraries, and accommodation details, and compute fares and fees, using schedules, rate books, and computers. Contact customers or travel agents to advise them of travel conveyance changes or to confirm reservations. Promote particular destinations, tour packages, and other travel services. Make and confirm reservations for transportation and accommodations, using telephones, faxes, mail, and computers. Contact motel, hotel, resort, and travel operators to obtain current advertising literature.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<th>Alabama Wage Data</th>
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<tr>
<td>$22.31</td>
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</table>

**2016 Estimated Employment:** 520

**2026 Projected Employment:** 560

**Average Total Openings:** 60

**Annual Growth Rate:** 0.74%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Airline Ticket Agent
- Airport Sales Agent
- Customer Service Agent
- Reservation Agent
- Reservationist
- Reservations Agent
- Reservations and Ticketing Agent
- Station Agent
- Ticket Agent
- Tour Sales Representative

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Residential Advisors

Coordinate activities in residential facilities in secondary and college dormitories, group homes, or similar establishments. Order supplies and determine need for maintenance, repairs, and furnishings. May maintain household records and assign rooms. May assist residents with problem solving or refer them to counseling resources.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need up to 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Sort and distribute mail. Observe students to detect and report unusual behavior. Supervise the activities of housekeeping personnel. Answer telephones, and route calls or deliver messages. Supervise students' housekeeping work to ensure that it is done properly. Determine the need for facility maintenance and repair, and notify appropriate personnel. Provide transportation or escort for expeditions, such as shopping trips or visits to doctors or dentists. Enforce rules and regulations to ensure the smooth and orderly operation of dormitory programs. Requested information on students' progress and the development of case plans. Make regular rounds to ensure that residents and areas are safe and secure. Counsel students in the handling of issues such as family, financial, and educational problems. Communicate with other staff to resolve problems with individual students. Assign rooms to students. Hold regular meetings with each assigned unit. Compile information such as residents' daily activities and the quantities of supplies used to prepare required reports. Confer with medical personnel to better understand the backgrounds and needs of individual residents. Accompany and supervise students during meals. Collaborate with counselors to develop counseling programs that address the needs of individual students. Oversee departmental budget. Develop program plans for individuals or assist in plan development. Develop and coordinate educational programs for residents. Process contract cancellations for students who are unable to follow residence hall policies and procedures. Administer, coordinate, or recommend disciplinary and corrective actions. Chaperone group-sponsored trips and social functions. Inventory, pack, and remove items left behind by former residents. Mediate interpersonal problems between residents. Supervise, train, and evaluate residence hall staff, including resident assistants, participants in work-study programs, and other student workers. Direct and participate in on- and off-campus recreational activities for residents of institutions, boarding schools, fraternities or sororities, children's homes, or similar establishments. Provide emergency first aid and summon medical assistance when necessary. Order supplies for facilities.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

Alabama Wage Data

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<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
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Alabama Projections

2016 Estimated Employment: 2,350
2026 Projected Employment: 2,570
Average Total Openings: 430
Annual Growth Rate: 0.90%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Hall Coordinator
Residence Director
Residence Hall Director
Residence Life Coordinator
Residence Life Director
Resident Advisor
Resident Assistant
Resident Director
Residential Life Director
Unit Coordinator

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-1126 Respiratory Therapists
Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.
Tasks: Maintain charts that contain patients' pertinent identification and therapy information. Inspect, clean, test, and maintain respiratory therapy equipment to ensure equipment is functioning safely and efficiently, ordering repairs when necessary. Explain treatment procedures to patients to gain cooperation and allay fears. Work as part of a team of physicians, nurses, or other healthcare professionals to manage patient care by assisting with medical procedures or related duties. Monitor patient's physiological responses to therapy, such as vital signs, arterial blood gases, or blood chemistry changes, and consult with physician if adverse reactions occur. Set up and operate devices, such as mechanical ventilators, therapeutic gas administration apparatus, environmental control systems, or aerosol generators, following specified parameters of treatment. Determine requirements for treatment, such as type, method and duration of therapy, precautions to be taken, or medication and dosages, compatible with physicians' orders. Enforce safety rules and ensure careful adherence to physicians' orders. Read prescription, measure arterial blood gases, and review patient information to assess patient condition. Perform endotracheal intubation to maintain open airways for patients who are unable to breathe on their own. Educate patients and their families about their conditions and teach appropriate disease management techniques, such as breathing exercises or the use of medications or respiratory equipment. Transport patients to the hospital or within the hospital. Make emergency visits to resolve equipment problems. Use a variety of testing techniques to assist doctors in cardiac or pulmonary research or to diagnose disorders. Perform bronchopulmonary drainage and assist or instruct patients in performance of breathing exercises. Conduct tests, such as electrocardiograms (EKGs), stress testing, or lung capacity tests, to evaluate patients' cardiopulmonary functions. Relay blood analysis results to a physician. Perform pulmonary function and adjust equipment to obtain optimum results in therapy. Provide emergency care, such as artificial respiration, external cardiac massage, or assistance with cardiopulmonary resuscitation. Teach, train, supervise, or use the assistance of students, respiratory therapy technicians, or assistants. Demonstrate respiratory care procedures to trainees or other healthcare personnel. Monitor cardiac patients, using electrocardiography devices, such as a holter monitor.
License: License Not Required.
Outlook: Very Good

Alabama Employment Outlook

<table>
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<td>$25.71</td>
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<td>$39,660</td>
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<td>$53,470</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Cardiopulmonary Rehabilitation Respiratory Therapist
Cardiopulmonary Technician and EEG Tech
(Cardiopulmonary Technician and Electroencephalogram Technician)
Certified Respiratory Therapist (CRT)
Clinical Coordinator of Respiratory Therapy
Registered Respiratory Therapist (RRT)
Respiratory Care Practitioner (RCP)
Respiratory Therapist (RT)
Respiratory Therapy Director
Staff Respiratory Therapist
Staff Therapist

Post-Secondary Institutions with Programs
George C Wallace Community College-Dothan
George C Wallace State Community College-Hanceville
Shelton State Community College
University of Alabama at Birmingham
University of South Alabama

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Roofers

Cover roofs of structures with shingles, slate, asphalt, aluminum, wood, or related materials. May spray roofs, sidings, and walls with material to bind, seal, insulate, or soundproof sections of structures.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

Tasks:
- Cut felt, shingles, or strips of flashing to fit angles formed by walls, vents, or intersecting roof surfaces.
- Inspect problem roofs to determine the best repair procedures. Install vapor barriers or layers of insulation on flat roofs. Install partially overlapping layers of material over roof insulation surfaces, using chalk lines, gauges on shingling hatchets, or lines on shingles. Cover roofs or exterior walls of structures with slate, asphalt, aluminum, wood, gravel, gypsum, or related materials, using brushes, knives, punches, hammers, or other tools. Estimate materials and labor required to complete roofing jobs. Waterproof or damp-proof walls, floors, roofs, foundations, or basements by painting or spraying surfaces with waterproof coatings or by attaching waterproofing membranes to surfaces. Install, repair, or replace single-ply roofing systems, using waterproof sheet materials such as modified plastics, elastomeric, or other asphaltic compositions. Cement or nail flashing strips of metal or shingle over joints to make them watertight. Smooth rough spots to prepare surfaces for waterproofing, using hammers, chisels, or rubbing bricks. Remove snow, water, or debris from roofs prior to applying roofing materials. Apply alternate layers of hot asphalt or tar and roofing paper to roofs. Attach roofing paper to roofs in overlapping strips to form bases for other materials. Apply plastic coatings, membranes, fiberglass, or felt over sloped roofs before applying shingles. Cover exposed nailheads with roofing cement or caulking to prevent water leakage or rust. Punch holes in slate, tile, terra cotta, or wooden shingles, using punches and hammers. Spray roofs, sidings, or walls to bind, seal, insulate, or soundproof sections of structures, using spray guns, air compressors, or heaters. Apply reflective roof coatings, such as special paints or single-ply roofing sheets, to existing roofs to reduce solar heat absorption. Mop or pour hot asphalt or tar onto roof bases. Set up scaffolding to provide safe access to roofs. Install attic ventilation systems, such as turbine vents, gable or ridge vents, or conventional or solar-powered exhaust fans. Glaze top layers to make a smooth finish or embed gravel in the bitumen for rough surfaces. Apply gravel or pebbles over top layers of roofs, using rakes or stiff-bristled brooms. Install skylights on roofs to increase natural light inside structures or to reduce energy costs. Install solar roofing systems that have energy-collecting photovoltaic panels built into roofing membranes, shingles, or tiles. Attach solar panels to existing roofs, according to specifications and without damaging roofing materials or the structural integrity of buildings. Install layers of vegetation-based green roofs, including protective membranes, drainage, aeration, water retention and filter layers, soil substrates, irrigation materials, and plants. Apply modular soil- and plant-containing grids over existing roof membranes to create green roofs.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$12.28</td>
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<tr>
<td>Average</td>
<td>$15.86</td>
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<td>Experienced</td>
<td>$17.65</td>
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<tr>
<td></td>
<td>Experienced</td>
</tr>
<tr>
<td></td>
<td>$36,700</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Commercial Roofer
- Industrial Roofer
- Metal Roofing Mechanic
- Residential Roofer
- Roof Mechanic
- Roof Service Technician
- Roofer
- Roofing Foreman
- Roofing Technician
- Sheet Metal Roofer

Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Sales Managers

Plan, direct, or coordinate the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Resolve customer complaints regarding sales and service. Direct clerical staff to keep records of export correspondence, bid requests, and credit collections, and to maintain current information on tariffs, licenses, and restrictions. Oversee regional and local sales managers and their staffs. Direct and coordinate activities involving sales of manufactured products, services, commodities, real estate or other subjects of sale. Direct, coordinate, and review activities in sales and service accounting and record-keeping, and in receiving and shipping operations. Confer with potential customers regarding equipment needs and advise customers on types of equipment to purchase. Determine price schedules and discount rates. Advise dealers and distributors on policies and operating procedures to ensure functional effectiveness of business. Monitor customer preferences to determine focus of sales efforts. Assess marketing potential of new and existing store locations, considering statistics and expenditures. Review operational records and reports to project sales and determine profitability. Prepare budgets and approve budget expenditures. Confer or consult with department heads to plan advertising services and to secure information on equipment and customer specifications. Direct foreign sales and service outlets of an organization. Visit franchised dealers to stimulate interest in establishment or expansion of leasing programs. Plan and direct staffing, training, and performance evaluations to develop and control sales and service programs. Represent company at trade association meetings to promote products.

License: License Not Required.

Outlook: Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
<td>$34.47</td>
<td>$71,690</td>
<td>2,790</td>
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<tr>
<td>Average</td>
<td>$60.88</td>
<td>$126,630</td>
<td>2,990</td>
</tr>
<tr>
<td>Experienced</td>
<td>$74.09</td>
<td>$154,100</td>
<td>260</td>
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</table>

**Average Total Openings:** 260

**Annual Growth Rate:** 0.69%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- District Sales Manager
- National Sales Manager
- Regional Sales Manager
- Sales and Marketing Vice President
- Sales Director
- Sales Manager
- Sales Representative
- Sales Supervisor
- Sales Vice President
- Store Manager

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
**41-4012 Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products**

Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Forward orders to manufacturers. Recommend products to customers, based on customers' needs and interests. Answer customers' questions about products, prices, availability, product uses, and credit terms. Contact regular and prospective customers to demonstrate products, explain product features, and solicit orders. Check stock levels and reorder merchandise as necessary. Arrange and direct delivery and installation of products and equipment. Identify prospective customers by using business directories, following leads from existing clients, participating in organizations and clubs, and attending trade shows and conferences. Consult with clients after sales or contract signings to resolve problems and to provide ongoing support. Estimate or quote prices, credit or contract terms, warranties, and delivery dates. Prepare drawings, estimates, and bids that meet specific customer needs. Monitor market conditions, product innovations, and competitors' products, prices, and sales. Perform administrative duties, such as preparing sales budgets and reports, keeping sales records, and filing expense account reports. Prepare sales contracts and order forms. Train customers' employees to operate and maintain new equipment. Provide customers with product samples and catalogs. Buy products from manufacturers or brokerage firms and distribute them to wholesale and retail clients. Negotiate with retail merchants to improve product exposure, such as shelf positioning and advertising. Obtain credit information about prospective customers. Negotiate details of contracts and payments. Plan, assemble, and stock product displays in retail stores, or make recommendations to retailers regarding product displays, promotional programs, and advertising.

**License:** License Not Required.

**Outlook:** Satisfactory

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**Alabama Employment Outlook**

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>$14.74</td>
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<tr>
<td>Average</td>
<td>$29.99</td>
</tr>
<tr>
<td>Experienced</td>
<td>$37.62</td>
</tr>
</tbody>
</table>

**2016 Estimated Employment:** 24,700

**2026 Projected Employment:** 26,590

**Average Total Openings:** 2,755

**Annual Growth Rate:** 0.74%

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Account Executive
- Account Manager
- Outside Sales
- Outside Sales Representative
- Sales
- Sales Consultant
- Sales Director
- Sales Rep
- Sales Representative
- Salesman

**Post-Secondary Institutions with Programs**
- Gadsden State Community College
- Tuskegee University

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
41-4011 Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products

Sell goods for wholesalers or manufacturers where technical or scientific knowledge is required in such areas as biology, engineering, chemistry, and electronics, normally obtained from at least 2 years of post-secondary education.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Advise customers on product usage to improve production. Inform customers of estimated delivery schedules, service contracts, warranties, or other information pertaining to purchased products. Appraise equipment to determine contract terms or trade-in values. Select or assist customers in selecting products based on customer needs, product specifications, and applicable regulations. Answer customers' questions about products, prices, availability, or credit terms. Stock or distribute resources, such as samples or promotional or educational materials. Compute customer's installation or production costs and estimate savings from new services, products, or equipment. Arrange for installation and testing of products or machinery. Maintain customer records, using automated systems. Collaborate with colleagues to exchange information, such as selling strategies or marketing information. Visit establishments to evaluate needs or to promote product or service sales. Quote prices, credit terms, or other bid specifications. Negotiate prices or terms of sales or service agreements. Study documentation or other information for new scientific or technical products. Emphasize product features based on analyses of customers' needs and on technical knowledge of product capabilities and limitations. Verify that delivery schedules meet project deadlines. Contact new or existing customers to discuss how specific products or services can meet their needs. Visit establishments, such as pharmacies, to determine product sales. Identify prospective customers using business directories, leads from existing clients, participation in organizations, or trade show or conference attendance. Provide feedback to product design teams so that products can be tailored to clients' needs. Verify customer credit ratings. Provide customers with ongoing technical support. Sell technical and scientific products that are environmentally sound or designed for environmental remediation. Prepare sales presentations or proposals to explain product specifications or applications. Consult with engineers regarding technical problems with products. Sell service contracts for technical or scientific products. Verify accuracy of materials lists. Obtain building blueprints or specifications for use by engineering departments in bid preparations. Demonstrate the operation or use of technical or scientific products. Prepare and submit sales contracts for orders. Complete expense reports, sales reports, or other paperwork. Initiate sales campaigns to meet sales and production expectations.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<td>Entry</td>
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<td>$42.62</td>
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<td>Experienced</td>
<td>$51.00</td>
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<td></td>
<td>$53,760</td>
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<td></td>
<td>$88,640</td>
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<td>$106,080</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Account Development Manager
- Account Executive
- Account Manager
- Channel Sales Director
- Distribution Sales Manager
- Inside Sales Representative
- Marketing Representative
- Sales Director
- Sales Manager
- Sales Representative

Post-Secondary Institutions with Programs
- No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Sawing Machine Setters, Operators, and Tenders, Wood
Set up, operate, or tend wood sawing machines. May operate CNC equipment. Includes lead sawyers.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Dispose of waste material after completing work assignments. Guide workpieces against saws, saw over workpieces by hand, or operate automatic feeding devices to guide cuts. Operate panelboards of saw or conveyor systems to move stock through processes or to cut stock to specified dimensions. Count, sort, or stack finished workpieces. Inspect and measure workpieces to mark for cuts and to verify the accuracy of cuts, using rulers, squares, or caliper rules. Examine logs or lumber to plan the best cuts. Trim lumber to straighten rough edges or remove defects, using circular saws. Select saw blades, types or grades of stock, or cutting procedures to be used, according to work orders or supervisors' instructions. Adjust bolts, clamps, stops, guides, or table angles or heights, using hand tools. Position and clamp stock on tables, conveyors, or carriages, using hoists, guides, stops, dogs, wedges, or wrenches. Set up, operate, or tend saws or machines that cut or trim wood to specified dimensions, such as circular saws, band saws, multiple-blade sawing machines, scroll saws, ripsaws, or crozer machines. Measure and mark stock for cuts. Unclamp and remove finished workpieces from tables. Inspect stock for imperfections or to estimate grades or qualities of stock or workpieces. Cut grooves, bevels, or miters, saw curved or irregular designs, and sever or shape metals, according to specifications or work orders. Monitor sawing machines, adjusting speed and tension and clearing jams to ensure proper operation. Unload and roll logs from trucks to sawmill decks or to carriages or move logs in ponds, using pike poles. Examine blueprints, drawings, work orders, or patterns to determine equipment set-up or selection details, procedures to be used, or dimensions of final products. Sharpen blades or replace defective or worn blades or bands, using hand tools. Adjust saw blades, using wrenches and rulers, or by turning handwheels or pressing pedals, levers, or panel buttons. Lubricate or clean machines, using wrenches, grease guns, or solvents. Mount and bolt sawing blades or attachments to machine shafts. Clear machine jams, using hand tools. Pull tables back against stops and depress pedals to advance cutterheads that shape stock ends.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
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<tr>
<th>Alabama Wage Data</th>
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</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry $8.93</td>
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<tr>
<td>Average</td>
<td>Average $13.63</td>
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<tr>
<td>Experienced</td>
<td>Experienced $15.99</td>
</tr>
<tr>
<td></td>
<td>Annual $33,250</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Bandmill Operator
- Cut Off Saw Operator
- Edgerman
- Knot Saw Operator
- Panel Saw Operator
- Planer
- Resaw Operator
- Rip Saw Operator
- Saw Operator
- Sawyer

**Post-Secondary Institutions with Programs**
- George C Wallace Community College - Dothan
- J F Ingram State Technical College
- Northwest-Shoals Community College - Muscle Shoals
- Southern Union State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Security and Fire Alarm Systems Installers

Install, program, maintain, or repair security or fire alarm wiring and equipment. Ensure that work is in accordance with relevant codes.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

**Tasks:** Install, maintain, or repair security systems, alarm devices, or related equipment, following blueprints of electrical layouts and building plans. Provide customers with cost estimates for equipment installation. Demonstrate systems for customers and explain details, such as the causes and consequences of false alarms. Consult with clients to assess risks and to determine security requirements. Mount and fasten control panels, door and window contacts, sensors, or video cameras and attach electrical and telephone wiring to connect components. Test and repair circuits and sensors, following wiring and system specifications. Adjust sensitivity of units, based on room structures and manufacturers’ recommendations, using programming keypads. Feed cables through access holes, roof spaces, or cavity walls to reach fixture outlets, positioning and terminating cables, wires, or strapping. Mount raceways and conduits and fasten wires to wood framing, using staplers. Examine systems to locate problems, such as loose connections or broken insulation. Drill holes for wiring in wall studs, joists, ceilings, or floors. Inspect installation sites and study work orders, building plans, and installation manuals to determine materials requirements and installation procedures. Prepare documents, such as invoices or warranties. Test backup batteries, keypad programming, sirens, or other security features to ensure proper functioning or to diagnose malfunctions. Keep informed of new products and developments. Order replacement parts.

**License:** This applicant should visit the Alabama Electronic Security Board for fees and examination schedules.

**Outlook:** Good

### Alabama Employment Outlook

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>2016 Estimated Employment:</strong></td>
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<tr>
<td>Entry</td>
<td>900</td>
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<tr>
<td>$13.94</td>
<td>1,000</td>
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<td>Average</td>
<td>Average Total Openings:</td>
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<tr>
<td>$21.67</td>
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<tr>
<td>Experienced</td>
<td>Annual Growth Rate:</td>
</tr>
<tr>
<td>$25.54</td>
<td>1.06%</td>
</tr>
<tr>
<td>Experienced</td>
<td>$53,120</td>
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<tr>
<td>Average</td>
<td>$45,080</td>
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<tr>
<td>Entry</td>
<td>$29,000</td>
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<tr>
<td>Average</td>
<td>$45,080</td>
</tr>
<tr>
<td>Experienced</td>
<td>$53,120</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Alarm Technician
- Fire Alarm Technician
- Home Security Alarm Installer
- Install Technician
- Installation Technician
- Installer
- Security Installation Technician
- Security Installer
- Security Technician
- Service Technician

### Post-Secondary Institutions with Programs
- Bevill State Community College
- Bishop State Community College
- Fortis College - Dothan
- Fortis College - Montgomery
- Fortis Institute - Birmingham
- Gadsden State Community College
- George C Wallace Community College - Dothan
- George C Wallace Community College - Selma
- H Councill Trenholm State Technical College
- J F Drake State Community and Technical College
- J F Ingram State Technical College
- John C Calhoun State Community College
- Lawson State Community College - Birmingham
- Northwest-Shoals Community College - Muscle Shoals
- Shelton State Community College
- Wallace State Community College - Hanceville

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
25-3021  Self-Enrichment Education Teachers
Teach or instruct courses other than those that normally lead to an occupational objective or degree. Courses may include self-improvement, nonvocational, and nonacademic subjects. Teaching may or may not take place in a traditional educational institution.

**Education:** These occupations typically require a high school diploma.

**OJT:** None

**Tasks:** Enforce policies and rules governing students. Observe students to determine qualifications, limitations, abilities, interests, and other individual characteristics. Prepare materials and classrooms for class activities. Instruct students individually and in groups, using various teaching methods, such as lectures, discussions, and demonstrations. Maintain accurate and complete student records as required by administrative policy. Conduct classes, workshops, and demonstrations, and provide individual instruction to teach topics and skills, such as cooking, dancing, writing, physical fitness, photography, personal finance, and flying. Monitor students' performance to make suggestions for improvement and to ensure that they satisfy course standards, training requirements, and objectives. Assign and grade class work and homework. Establish clear objectives for all lessons, units, and projects and communicate those objectives to students. Instruct and monitor students in the use and care of equipment and materials to prevent injury and damage. Prepare and administer written, oral, and performance tests, and issue grades in accordance with performance. Adapt teaching methods and instructional materials to meet students' varying needs and interests. Use computers, audio-visual aids, and other equipment and materials to supplement presentations. Prepare instructional program objectives, outlines, and lesson plans. Prepare students for further development by encouraging them to explore learning opportunities and to persevere with challenging tasks. Review instructional content, methods, and student evaluations to assess strengths and weaknesses, and to develop recommendations for course revision, development, or elimination. Plan and conduct activities for a balanced program of instruction, demonstration, and work time that provides students with opportunities to observe, question, and investigate. Observe and evaluate the performance of other instructors. Organize and supervise games and other recreational activities to promote physical, mental, and social development. Schedule class times to ensure maximum attendance. Meet with other instructors to discuss individual students and their progress. Meet with parents and guardians to discuss their children's progress and to determine their priorities for their children. Select, order, and issue books, materials, and supplies for courses or projects. Prepare and implement remedial programs for students requiring extra help. Participate in publicity planning and student recruitment. Confer with other teachers and professionals to plan and schedule lessons promoting learning and development.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$10.60</td>
<td>$22,060</td>
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<tr>
<td><strong>Average</strong></td>
<td>$41,360</td>
</tr>
<tr>
<td>$19.88</td>
<td></td>
</tr>
<tr>
<td><strong>Experienced</strong></td>
<td>$51,010</td>
</tr>
<tr>
<td>$24.52</td>
<td></td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Ballet Teacher
- Ceramics Instructor
- Dance Instructor
- Driving Instructor
- Flute Teacher
- Gymnastics Instructor
- Martial Arts Instructor
- Piano Teacher
- Scuba Diving Instructor
- Swimming Instructor

**Post-Secondary Institutions with Programs**
- Auburn University
- Troy University
- University of West Alabama

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*2018 Career Exploration Guide*

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Septic Tank Servicers and Sewer Pipe Cleaners
Clean and repair septic tanks, sewer lines, or drains. May patch walls and partitions of tank, replace damaged drain tile, or repair breaks in underground piping.

Education: These occupations typically require a high school diploma.
OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Communicate with supervisors and other workers, using equipment such as wireless phones, pagers, or radio telephones. Drive trucks to transport crews, materials, and equipment. Prepare and keep records of actions taken, including maintenance and repair work. Inspect manholes to locate sewer line stoppages. Ensure that repaired sewer line joints are tightly sealed before backfilling begins. Operate sewer cleaning equipment, including power rodders, high-velocity water jets, sewer flushers, bucket machines, wayne balls, and vac-alls. Service, adjust, and make minor repairs to equipment, machines, and attachments. Start machines to feed revolving cables or rods into openings, stopping machines and changing knives to conform to pipe sizes. Clean and repair septic tanks, sewer lines, or related structures such as manholes, culverts, and catch basins. Measure excavation sites, using plumbers' snakes, tapelines, or lengths of cutting heads within sewers, and mark areas for digging. Dig out sewer lines manually, using shovels. Update sewer maps and manhole charts. Locate problems, using specially designed equipment, and mark where digging must occur to reach damaged tanks or pipes. Cover repaired pipes with dirt, and pack backfilled excavations, using air and gasoline tampers. Withdraw cables from pipes and examine them for evidence of mud, roots, grease, and other deposits indicating broken or clogged sewer lines. Rotate cleaning rods manually, using turning pins. Cut damaged sections of pipe with cutters, remove broken sections from ditches, and replace pipe sections, using pipe sleeves. Requisition or order tools and equipment. Install rotary knives on flexible cables mounted on machine reels, according to the diameters of pipes to be cleaned. Break asphalt and other pavement so that pipes can be accessed, using airhammers, picks, and shovels. Tap mainline sewers to install sewer saddles. Clean and disinfect domestic basements and other areas flooded by sewer stoppages.

License: License Not Required.
Outlook: Good

Alabama Employment Outlook

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<thead>
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<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>2016 Estimated Employment:</td>
</tr>
<tr>
<td>Entry</td>
<td>250</td>
</tr>
<tr>
<td>$10.40</td>
<td>2026 Projected Employment:</td>
</tr>
<tr>
<td>Average</td>
<td>280</td>
</tr>
<tr>
<td>$15.70</td>
<td>Average Total Openings:</td>
</tr>
<tr>
<td>Experienced</td>
<td>35</td>
</tr>
<tr>
<td>$18.35</td>
<td>Annual Growth Rate:</td>
</tr>
<tr>
<td></td>
<td>1.14%</td>
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Alabama Wage Data
Hourly Wage Entry $10.40 Average $15.70 Experienced $18.35
Annual Wage Entry $21,630 Average $32,660 Experienced $38,180

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Drain Cleaner
Drain Technician
Laborer
Maintenance Worker
Public Works Technician
Septic Cleaner
Septic Pump Truck Driver
Septic Tank Service Technician
Service Technician
Sewer Bricklayer

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Sheet Metal Workers

Fabricate, assemble, install, and repair sheet metal products and equipment, such as ducts, control boxes, drainpipes, and furnace casings. Work may involve any of the following: setting up and operating fabricating machines to cut, bend, and straighten sheet metal; shaping metal over anvils, blocks, or forms using hammer; operating soldering and welding equipment to join sheet metal parts; or inspecting, assembling, and smoothing seams and joints of burned surfaces. Includes sheet metal duct installers who install prefabricated sheet metal ducts used for heating, air conditioning, or other purposes.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Fasten seams or joints together with welds, bolts, cement, rivets, solder, caulks, metal drive clips, or bonds to assemble components into products or to repair sheet metal items. Fabricate ducts for high efficiency heating, ventilating, and air conditioning (HVAC) systems to maximize efficiency of systems. Verify that heating, ventilating, and air conditioning (HVAC) systems are designed, installed, and calibrated in accordance with green certification standards, such as those of Leadership in Energy and Environmental Design (LEED). Perform sheet metal work necessary for solar panel installations. Maintain equipment, making repairs or modifications when necessary. Determine project requirements, such as scope, assembly sequences, or required methods or materials, using blueprints, drawings, or written or verbal instructions. Select gauges or types of sheet metal or nonmetallic material, according to product specifications. Inspect individual parts, assemblies, or installations, using measuring instruments, such as calipers, scales, or micrometers. Shape metal material over anvils, blocks, or other forms, using hand tools. Develop or lay out patterns, using computerized metalworking equipment. Transport prefabricated parts to construction sites for assembly and installation. Trim, file, grind, deburr, buff, or smooth surfaces, seams, or joints of assembled parts, using hand tools or portable power tools. Convert blueprints into shop drawings to be followed in the construction or assembly of sheet metal products. Finish parts, using hacksaws or hand, rotary, or squaring shears. Install assemblies, such as flashing, pipes, tubes, heating and air conditioning ducts, furnace casings, rain gutters, or downspouts in supportive frameworks. Lay out, measure, and mark dimensions and reference lines on material, such as roofing panels, using calculators, scribes, dividers, squares, or rulers. Hire, train, or supervise new employees or apprentices. Perform building commissioning activities by completing mechanical inspections of a building's water, lighting, or heating, ventilating, and air conditioning (HVAC) systems.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2016 Estimated Employment:</td>
</tr>
<tr>
<td>Hourly Wage</td>
<td>Entry $13.98 Entry $29,090</td>
</tr>
<tr>
<td>Annual Wage</td>
<td>Average $18.72 Average $38,930</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced $21.09 Experienced $43,860</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Field Installer
HVAC Sheet Metal Installer (Heating, Ventilation, and Air Conditioning Sheet Metal Installer)
Journeyman Sheet Metal Worker
Sheet Metal Apprentice
Sheet Metal Fabricator
Sheet Metal Foreman
Sheet Metal Installer
Sheet Metal Layout Mechanic
Sheet Metal Mechanic
Sheet Metal Worker

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
39-5094 Skincare Specialists

Provide skincare treatments to face and body to enhance an individual's appearance. Includes electrologists and laser hair removal specialists.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Apply chemical peels to reduce fine lines and age spots. Cleanse clients' skin with water, creams, or lotions. Examine clients' skin, using magnifying lamps or visors when necessary, to evaluate skin condition and appearance. Keep records of client needs and preferences and the services provided. Sterilize equipment and clean work areas. Demonstrate how to clean and care for skin properly and recommend skin-care regimens. Select and apply cosmetic products, such as creams, lotions, and tonics. Determine which products or colors will improve clients' skin quality and appearance. Treat the facial skin to maintain and improve its appearance, using specialized techniques and products, such as peels and masks. Provide facial and body massages. Perform simple extractions to remove blackheads. Stay abreast of latest industry trends, products, research, and treatments. Remove body and facial hair by applying wax. Advise clients about colors and types of makeup and instruct them in makeup application techniques. Refer clients to medical personnel for treatment of serious skin problems. Collaborate with plastic surgeons and dermatologists to provide patients with preoperative and postoperative skin care. Sell makeup to clients. Tint eyelashes and eyebrows.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$8.74</td>
<td>$18,180</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>$14.86</td>
<td>$30,910</td>
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<td>Experienced</td>
<td>Experienced</td>
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<tr>
<td>$17.92</td>
<td>$37,270</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Aesthetician
Clinical Esthetician
Esthetician
Facialist
Lead Esthetician
Medical Esthetician
Skin Care Specialist
Skin Care Technician
Skin Care Therapist
Spa Technician

Post-Secondary Institutions with Programs
Blue Cliff Career College
Hair Academy
Lurleen B Wallace Community College
Paul Mitchell the School-Birmingham
11-9151 Social and Community Service Managers

Plan, direct, or coordinate the activities of a social service program or community outreach organization. Oversee the program or organization's budget and policies regarding participant involvement, program requirements, and benefits. Work may involve directing social workers, counselors, or probation officers.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Establish and oversee administrative procedures to meet objectives set by boards of directors or senior management. Direct activities of professional and technical staff members and volunteers. Establish and maintain relationships with other agencies and organizations in community to meet community needs and to ensure that services are not duplicated. Evaluate the work of staff and volunteers to ensure that programs are of appropriate quality and that resources are used effectively. Prepare and maintain records and reports, such as budgets, personnel records, or training manuals. Act as consultants to agency staff and other community programs regarding the interpretation of program-related federal, state, and county regulations and policies. Provide direct service and support to individuals or clients, such as handling a referral for child advocacy issues, conducting a needs evaluation, or resolving complaints. Participate in the determination of organizational policies regarding such issues as participant eligibility, program requirements, and program benefits. Implement and evaluate staff, volunteer, or community training programs. Research and analyze member or community needs to determine program directions and goals. Analyze proposed legislation, regulations, or rule changes to determine how agency services could be impacted. Speak to community groups to explain and interpret agency purposes, programs, and policies. Direct fundraising activities and the preparation of public relations materials. Recruit, interview, and hire or sign up volunteers and staff. Represent organizations in relations with governmental and media institutions. Plan and administer budgets for programs, equipment, and support services.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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</tr>
</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry $20.44 $42,500</td>
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<tr>
<td>Average</td>
<td>Average $32.61 $67,830</td>
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<tr>
<td>Experienced</td>
<td>Experienced $38.70 $80,500</td>
</tr>
</tbody>
</table>

2026 Projected Employment: 1,740
Average Total Openings: 160
Annual Growth Rate: 1.36%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Adoption Services Manager
Child Welfare Services Director
Children's Service Supervisor
Clinical Services Director
Community Services Block Grant/Outreach Social Worker
(CSBG/Outreach Social Worker)
Community Services Director
Psychiatric Social Worker Supervisor
Social Services Director
Transitional Care Director
Vocational Rehabilitation Administrator

Post-Secondary Institutions with Programs
Alabama A & M University
Alabama State University
Auburn University
Jacksonville State University
Judson College
Lawson State Community College-Birmingham Campus
Miles College
Oakwood University
Samford University
Talladega College
The University of Alabama
Troy University
Tuskegee University
University of Alabama at Birmingham
University of Montevallo
University of North Alabama
University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Social and Human Service Assistants

Assist in providing client services in a wide variety of fields, such as psychology, rehabilitation, or social work, including support for families. May assist clients in identifying and obtaining available benefits and social and community services. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, rehabilitation, or dependent care.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Oversee day-to-day group activities of residents in institution. Submit reports and review reports or problems with superior. Keep records or prepare reports for owner or management concerning visits with clients.
- Advise clients regarding food stamps, child care, food, money management, sanitation, or housekeeping.
- Explain rules established by owner or management, such as sanitation or maintenance requirements or parking regulations. Inform tenants of facilities, such as laundries or playgrounds. Consult with supervisor concerning programs for individual families. Demonstrate use and care of equipment for tenant use.
- Transport and accompany clients to shopping areas or to appointments, using automobile. Provide information or refer individuals to public or private agencies or community services for assistance. Interview individuals or family members to compile information on social, educational, criminal, institutional, or drug history. Assist clients with preparation of forms, such as tax or rent forms. Assist in locating housing for displaced individuals. Visit individuals in homes or attend group meetings to provide information on agency services, requirements, or procedures. Observe and discuss meal preparation and suggest alternate methods of food preparation. Assist in planning food budgets, using charts or sample budgets. Observe clients' food selections and recommend alternate economical and nutritional food choices. Meet with youth groups to acquaint them with consequences of delinquent acts.

**License:** License Not Required.

**Outlook:** Good

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**Alabama Employment Outlook**

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
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<td>$9.11</td>
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<td>Experienced</td>
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<tr>
<td></td>
<td><strong>Entry</strong></td>
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<tr>
<td></td>
<td><strong>$18,950</strong></td>
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<tr>
<td></td>
<td><strong>$30,680</strong></td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Advocate
- Caseworker
- Community Coordinator
- Family Support Worker
- Home based Assistant
- Human Services Program Specialist
- Mental Health Technician
- Outreach Specialist
- Social Services Assistant
- Social Work Associate

**Post-Secondary Institutions with Programs**
- Samford University
15-1132  **Software Developers, Applications**

Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. May supervise computer programmers.

**Education:**
Most of these occupations typically require a four-year bachelor's degree.

**OJT:**
Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Store, retrieve, and manipulate data for analysis of system capabilities and requirements. Analyze information to determine, recommend, and plan computer specifications and layouts, and peripheral equipment modifications. Develop and direct software system testing and validation procedures, programming, and documentation. Modify existing software to correct errors, allow it to adapt to new hardware, or to improve its performance. Confer with systems analysts, engineers, programmers and others to design system and to obtain information on project limitations and capabilities, performance requirements and interfaces. Design, develop and modify software systems, using scientific analysis and mathematical models to predict and measure outcome and consequences of design. Consult with customers about software system design and maintenance. Analyze user needs and software requirements to determine feasibility of design within time and cost constraints. Supervise the work of programmers, technologists and technicians and other engineering and scientific personnel. Determine system performance standards. Coordinate software system installation and monitor equipment functioning to ensure specifications are met. Obtain and evaluate information on factors such as reporting formats required, costs, and security needs to determine hardware configuration. Recommend purchase of equipment to control dust, temperature, and humidity in area of system installation. Train users to use new or modified equipment. Specify power supply requirements and configuration.

**License:**
License Not Required.

**Outlook:**
Very Good

### Alabama Employment Outlook

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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td><strong>Entry</strong></td>
<td><strong>Entry</strong></td>
</tr>
<tr>
<td>$28.17</td>
<td>$58,600</td>
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<tr>
<td><strong>Average</strong></td>
<td><strong>Average</strong></td>
</tr>
<tr>
<td>$44.40</td>
<td>$92,360</td>
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<tr>
<td><strong>Experienced</strong></td>
<td><strong>Experienced</strong></td>
</tr>
<tr>
<td>$52.52</td>
<td>$109,240</td>
</tr>
</tbody>
</table>

**2016 Estimated Employment:** 5,230  
**2026 Projected Employment:** 7,010  
**Average Total Openings:** 565  
**Annual Growth Rate:** 2.97%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Application Developer
- Application Integration Engineer
- Applications Developer
- Computer Consultant
- Information Technology Analyst (IT Analyst)
- Software Architect
- Software Developer
- Software Development Engineer
- Software Engineer
- Technical Consultant

### Post-Secondary Institutions with Programs
- Alabama State University
- Auburn University
- Birmingham Southern College
- Columbia Southern University
- Faulkner University
- Oakwood University
- Samford University
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of South Alabama
Software Developers, Systems Software

Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. May design embedded systems software. Apply principles and techniques of computer science, engineering, and mathematical analysis.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Modify existing software to correct errors, to adapt it to new hardware, or to upgrade interfaces and improve performance. Consult with customers or other departments on project status, proposals, or technical issues, such as software system design or maintenance. Prepare reports or correspondence concerning project specifications, activities, or status. Monitor functioning of equipment to ensure system operates in conformance with specifications. Direct software programming and development of documentation. Consult with engineering staff to evaluate interface between hardware and software, develop specifications and performance requirements, or resolve customer problems. Develop or direct software system testing or validation procedures. Supervise and assign work to programmers, designers, technologists, technicians, or other engineering or scientific personnel. Use microcontrollers to develop control signals, implement control algorithms, or measure process variables, such as temperatures, pressures, or positions. Confer with data processing or project managers to obtain information on limitations or capabilities for data processing projects. Design or develop software systems, using scientific analysis and mathematical models to predict and measure outcome and consequences of design. Store, retrieve, and manipulate data for analysis of system capabilities and requirements. Analyze information to determine, recommend, and plan installation of a new system or modification of an existing system. Advise customer about or perform maintenance of software system. Coordinate installation of software system. Specify power supply requirements and configuration. Train users to use new or modified equipment. Evaluate factors such as reporting formats required, cost constraints, or need for security restrictions to determine hardware configuration. Recommend purchase of equipment to control dust, temperature, or humidity in area of system installation.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
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<th>Alabama Projections</th>
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<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$33.55</td>
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<tr>
<td>Average</td>
<td>$49.70</td>
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<tr>
<td>Experienced</td>
<td>$57.78</td>
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<table>
<thead>
<tr>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
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</thead>
<tbody>
<tr>
<td>5,020</td>
<td>365</td>
</tr>
</tbody>
</table>

| 1.66%                     |

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Developer
- Infrastructure Engineer
- Network Engineer
- Publishing Systems Analyst
- Senior Software Engineer
- Software Architect
- Software Developer
- Software Engineer
- Systems Coordinator
- Systems Engineer

### Post-Secondary Institutions with Programs

- Alabama State University
- Auburn University
- Birmingham Southern College
- Columbia Southern University
- Faulkner University
- Oakwood University
- Samford University
- South University - Montgomery
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
29-1127  Speech-Language Pathologists
Assess and treat persons with speech, language, voice, and fluency disorders. May select alternative communication systems and teach their use. May perform research related to speech and language problems.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Monitor patients' progress and adjust treatments accordingly. Complete administrative responsibilities, such as coordinating paperwork, scheduling case management activities, or writing lesson plans. Participate in and write reports for meetings regarding patients' progress, such as individualized educational planning (IEP) meetings, in-service meetings, or intervention assistance team meetings. Supervise or collaborate with therapy team. Communicate with non-speaking students, using sign language or computer technology. Write reports and maintain proper documentation of information, such as client Medicaid or billing records or caseload activities, including the initial evaluation, treatment, progress, and discharge of clients. Evaluate hearing or speech and language test results, barium swallow results, or medical or background information to diagnose and plan treatment for speech, language, fluency, voice, or swallowing disorders. Use computer applications to identify or assist with communication disabilities. Teach clients to control or strengthen tongue, jaw, face muscles, or breathing mechanisms. Develop individual or group activities or programs in schools to deal with behavior, speech, language, or swallowing problems. Design, develop, or employ alternative diagnostic or communication devices or strategies. Consult with and advise educators or medical staff on speech or hearing topics, such as communication strategies or speech and language stimulation. Administer hearing or speech and language evaluations, tests, or examinations to patients to collect information on type and degree of impairments, using written or oral tests or special instruments. Develop speech exercise programs to reduce disabilities. Develop or implement treatment plans for problems such as stuttering, delayed language, swallowing disorders, or inappropriate pitch or harsh voice problems, based on own assessments and recommendations of physicians, psychologists, or social workers. Instruct clients in techniques for more effective communication, such as sign language, lip reading, or voice improvement. Provide communication instruction to dialect speakers or students with limited English proficiency. Educate patients and family members about various topics, such as communication techniques or strategies to cope with or to avoid personal misunderstandings. Conduct lessons or direct educational or therapeutic games to assist teachers dealing with speech problems. Consult with and refer clients to additional medical or educational services. Participate in conferences, training, continuing education courses, or publish research results to share knowledge of new hearing or speech disorder treatment methods or technologies. Conduct or direct research on speech or hearing topics and report findings for use in developing procedures, technologies, or treatments.

License: Application Fee: $200.00 License Renewal Fee: $100.00 License Fee: $75.00

Outlook: Good

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<th>Alabama Wage Data</th>
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<tr>
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<td>2016 Estimated Employment: 1,650</td>
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<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>$24.15</td>
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<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>$34.38</td>
<td>$71,510</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
<tr>
<td>$39.50</td>
<td>$82,150</td>
</tr>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Bilingual Speech-Language Pathologist
Communication Specialist
Educational Speech-Language Clinician
Speech and Language Clinician
Speech and Language Specialist
Speech Pathologist
Speech Therapist
Speech-Language Pathologist (SLP)
Speech/Language Therapist
Teacher of the Speech and Hearing Handicapped

Post-Secondary Institutions with Programs
Alabama A & M University
Auburn University
Oakwood University
Samford University
The University of Alabama
University of Montevallo
University of South Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
15-2041 Statisticians

Develop or apply mathematical or statistical theory and methods to collect, organize, interpret, and summarize numerical data to provide usable information. May specialize in fields such as bio-statistics, agricultural statistics, business statistics, or economic statistics. Includes mathematical and survey statisticians.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** None

**Tasks:** Identify relationships and trends in data, as well as any factors that could affect the results of research. Supervise and provide instructions for workers collecting and tabulating data. Adapt statistical methods to solve specific problems in fields, such as economics, biology, and engineering. Analyze and interpret statistical data to identify significant differences in relationships among sources of information. Process large amounts of data for statistical modeling and graphic analysis, using computers. Report results of statistical analyses, including information in the form of graphs, charts, and tables. Prepare data for processing by organizing information, checking for inaccuracies, and adjusting and weighting the raw data. Evaluate the statistical methods and procedures used to obtain data to ensure validity, applicability, efficiency, and accuracy. Develop and test experimental designs, sampling techniques, and analytical methods. Develop an understanding of fields to which statistical methods are to be applied to determine whether methods and results are appropriate. Apply sampling techniques or use complete enumeration bases to determine and define groups to be surveyed. Present statistical and nonstatistical results, using charts, bullets, and graphs, in meetings or conferences to audiences such as clients, peers, and students or in peer-reviewed papers and technical manuals. Examine theories, such as those of probability and inference, to discover mathematical bases for new or improved methods of obtaining and evaluating numerical data. Plan data collection methods for specific projects and determine the types and sizes of sample groups to be used. Design research projects that apply valid scientific techniques and use information obtained from baselines or historical data to structure uncompromised and efficient analyses.

**License:** License Not Required.

**Outlook:** Very Good

### Alabama Employment Outlook

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</thead>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry $20.88</td>
<td>Entry $43,420</td>
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<tr>
<td>Average $30.87</td>
<td>Average $64,200</td>
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<tr>
<td>Experienced $35.86</td>
<td>Experienced $74,600</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Assistant Division Chief for Statistical Program Management
- Clinical Statistics Manager
- Human Resource Statistician
- Private Statistical/Psychometric Consultant
- Program Research Specialist
- Senior Statistician
- Statistical Analyst
- Statistician
- Statistician (Demographer)
- Trend Investigator

**Post-Secondary Institutions with Programs**
- Alabama A & M University
- Alabama State University
- Athens State University
- Auburn University
- Birmingham Southern College
- Faulkner University
- Huntingdon College
- Jacksonville State University
- Judson College
- Miles College
- Samford University
- Stillman College
- The University of Alabama
- Troy University
- Tuskegee University
- University of Alabama - Birmingham
- University of Alabama - Huntsville
- University of North Alabama
- University of South Alabama
- University of West Alabama

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
43-5081  Stock Clerks and Order Fillers
Receive, store, and issue sales floor merchandise, materials, equipment, and other items from stockroom, warehouse, or storage yard to fill shelves, racks, tables, or customers' orders. May mark prices on merchandise and set up sales displays.

Education: These occupations usually require a high school diploma.

OJT: Employees in these occupations need anywhere from a few months to one year of working with experienced employees. A recognized apprenticeship program may be associated with these occupations.

Tasks: Answer customers' questions about merchandise and advise customers on merchandise selection. Stamp, attach, or change price tags on merchandise, referring to price list. Stock shelves, racks, cases, bins, and tables with new or transferred merchandise. Compare merchandise invoices to items actually received to ensure that shipments are correct. Itemize and total customer merchandise selection at checkout counter, using cash register, and accept cash or charge card for purchases. Transport packages to customers' vehicles. Take inventory or examine merchandise to identify items to be reordered or replenished. Receive, open, unpack and issue sales floor merchandise. Clean display cases, shelves, and aisles. Design and set up advertising signs and displays of merchandise on shelves, counters, or tables to attract customers and promote sales. Pack customer purchases in bags or cartons. Requisition merchandise from supplier based on available space, merchandise on hand, customer demand, or advertised specials.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
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<th>Alabama Projections</th>
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<td>Hourly Wage</td>
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<tr>
<td>Entry</td>
<td>$8.79</td>
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<td>$12.19</td>
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<td>Experienced</td>
<td>$13.89</td>
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</tbody>
</table>

Average Total Openings: 3,240
Annual Growth Rate: 0.65%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Shampooers
Food Preparation Workers
Janitors and Cleaners, Except Maids and Housekeeping
Cleaners
Combined Food Preparation and Serving Workers, Including
Fast Food
Library Assistants, Clerical
Dining Room and Cafeteria Attendants and Bartender
Helpers
Order Fillers, Wholesale and Retail Sales
Gaming and Sports Book Writers and Runners
Cashiers
Gaming Cage Workers

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Structural Iron and Steel Workers

Raise, place, and unite iron or steel girders, columns, and other structural members to form completed structures or structural frameworks. May erect metal storage tanks and assemble prefabricated metal buildings.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Read specifications or blueprints to determine the locations, quantities, or sizes of materials required.
- Connect columns, beams, and girders with bolts, following blueprints and instructions from supervisors. Hold rivets while riveters use air hammers to form heads on rivets. Verify vertical and horizontal alignment of structural steel members, using plumb bobs, laser equipment, transits, or levels. Pull, push, or pry structural steel members into approximate positions for bolting into place.
- Erect metal or precast concrete components for structures, such as buildings, bridges, dams, towers, storage tanks, fences, or highway guard rails. Bolt aligned structural steel members in position for permanent riveting, bolting, or welding into place.
- Hoist steel beams, girders, or columns into place, using cranes or signaling hoisting equipment operators to lift and position structural steel members.
- Fasten structural steel members to hoist cables, using chains, cables, or rope. Force structural steel members into final positions, using turnbuckles, crowbars, jacks, or hand tools.
- Unload and position prefabricated steel units for hoisting as needed.
- Assemble hoisting equipment or rigging, such as cables, pulleys, or hooks, to move heavy equipment or materials.
- Drive drift pins through rivet holes to align rivet holes in structural steel members with corresponding holes in previously placed members.
- Cut, bend, or weld steel pieces, using metal shears, torches, or welding equipment.
- Fabricate metal parts, such as steel frames, columns, beams, or girders, according to blueprints or instructions from supervisors.
- Place blocks under reinforcing bars used to reinforce floors.
- Catch hot rivets in buckets and insert rivets in holes, using tongs.
- Dismantle structures or equipment.
- Insert sealing strips, wiring, insulating material, ladders, flanges, gauges, or valves, depending on types of structures being assembled.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entry</strong></td>
<td><strong>2016 Estimated Employment:</strong></td>
</tr>
<tr>
<td>Hourly Wage</td>
<td><strong>2026 Projected Employment:</strong></td>
</tr>
<tr>
<td>$13.36</td>
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<td>Average</td>
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<tr>
<td>$21.44</td>
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<td><strong>Annual Growth Rate:</strong></td>
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<tr>
<td>$25.48</td>
<td><strong>1.14%</strong></td>
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| Entry                   | Average                           |
| $27,790                 | $44,600                           |
| $53,000                 |                                   |

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Fitter
- Fitter / Welder
- Iron Worker
- Iron Worker Foreman
- Ironworker
- Rigger
- Steel Fabricator
- Steel Worker
- Structural Steel Erector
- Tower Hand

**Post-Secondary Institutions with Programs**
- No postsecondary institutions with reported programs.
Substance Abuse, Behavioral Disorder Counselors, and Mental Health Counselors

Counsel and advise individuals with alcohol, tobacco, drug, or other problems, such as gambling and eating disorders. May counsel individuals, families, or groups or engage in prevention programs.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Participate in case conferences or staff meetings. Complete and maintain accurate records or reports regarding the patients' histories and progress, services provided, or other required information. Interview clients, review records, and confer with other professionals to evaluate individuals' mental and physical condition and to determine their suitability for participation in a specific program. Develop client treatment plans based on research, clinical experience, and client histories. Review and evaluate clients' progress in relation to measurable goals described in treatment and care plans. Intervene as an advocate for clients or patients to resolve emergency problems in crisis situations. Instruct others in program methods, procedures, or functions. Counsel clients or patients, individually or in group sessions, to assist in overcoming dependencies, adjusting to life, or making changes. Modify treatment plans to comply with changes in client status. Provide clients or family members with information about addiction issues and about available services or programs, making appropriate referrals when necessary. Conduct chemical dependency program orientation sessions. Assess individuals' degree of drug dependency by collecting and analyzing urine samples. Coordinate counseling efforts with mental health professionals or other health professionals, such as doctors, nurses, or social workers. Coordinate activities with courts, probation officers, community services, or other post-treatment agencies. Act as liaisons between clients and medical staff. Counsel family members to assist them in understanding, dealing with, and supporting clients or patients. Train or supervise student interns or new staff members. Supervise or direct other workers providing services to clients or patients. Confer with family members or others close to clients to keep them informed of treatment planning and progress. Plan or implement follow-up or aftercare programs for clients to be discharged from treatment programs. Develop, implement, or evaluate public education, prevention, or health promotion programs, working in collaboration with organizations, institutions, or communities. Follow progress of discharged patients to determine effectiveness of treatments. Attend training sessions to increase knowledge and skills.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
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<td>$22.82</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Addictions Counselor
- Case Manager
- Chemical Dependency Counselor (CD Counselor)
- Chemical Dependency Professional
- Clinical Counselor
- Correctional Substance Abuse Counselor
- Counselor
- Drug and Alcohol Treatment Specialist (DATS)
- Prevention Specialist
- Substance Abuse Counselor (SA Counselor)

### Post-Secondary Institutions with Programs

- Gadsden State Community College
- George C Wallace State Community College-Hanceville
**Surgeons**

Physicians who treat diseases, injuries, and deformities by invasive, minimally-invasive, or non-invasive surgical methods, such as using instruments, appliances, or by manual manipulation.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** None

**Tasks:** Examine patient to obtain information on medical condition and surgical risk. Prescribe preoperative and postoperative treatments and procedures, such as sedatives, diets, antibiotics, or preparation and treatment of the patient's operative area. Follow established surgical techniques during the operation. Analyze patient's medical history, medication allergies, physical condition, and examination results to verify operation's necessity and to determine best procedure. Prepare case histories. Diagnose bodily disorders and orthopedic conditions and provide treatments, such as medicines and surgeries, in clinics, hospital wards, or operating rooms. Provide consultation and surgical assistance to other physicians and surgeons. Operate on patients to correct deformities, repair injuries, prevent and treat diseases, or improve or restore patients' functions. Direct and coordinate activities of nurses, assistants, specialists, residents, and other medical staff. Refer patient to medical specialist or other practitioners when necessary. Examine instruments, equipment, and operating room to ensure sterility. Manage surgery services, including planning, scheduling and coordination, determination of procedures, or procurement of supplies and equipment. Conduct research to develop and test surgical techniques that can improve operating procedures and outcomes.

**License:** License Not Required.

**Outlook:** Good

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### Alabama Employment Outlook

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<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
</tr>
<tr>
<td>Experienced</td>
<td>Experienced</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

Cardiovascular Surgeon
General Surgeon
Hand Surgeon
Orthopaedic Surgeon
Orthopedic Surgeon
Physician
Plastic Surgeon
Surgeon
Thoracic Surgeon
Vascular Surgeon

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
**29-2055 Surgical Technologists**

Assist in operations, under the supervision of surgeons, registered nurses, or other surgical personnel. May help set up operating room, prepare and transport patients for surgery, adjust lights and equipment, pass instruments and other supplies to surgeons and surgeon's assistants, hold retractors, cut sutures, and help count sponges, needles, supplies, and instruments.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Maintain a proper sterile field during surgical procedures. Hand instruments and supplies to surgeons and surgeons' assistants, hold retractors and cut sutures, and perform other tasks as directed by surgeon during operation. Provide technical assistance to surgeons, surgical nurses, or anesthesiologists. Monitor and continually assess operating room conditions, including patient and surgical team needs. Operate, assemble, adjust, or monitor sterilizers, lights, suction machines, or diagnostic equipment to ensure proper operation. Scrub arms and hands and assist the surgical team to scrub and put on gloves, masks, and surgical clothing. Prepare patients for surgery, including positioning patients on the operating table and covering them with sterile surgical drapes to prevent exposure. Count sponges, needles, and instruments before and after operation. Observe patients' vital signs to assess physical condition. Prepare, care for, and dispose of tissue specimens taken for laboratory analysis. Order surgical supplies. Clean and restock operating room, gathering and placing equipment and supplies and arranging instruments according to instructions, such as a preference card. Maintain supply of fluids, such as plasma, saline, blood, or glucose, for use during operations. Prepare dressings or bandages and apply or assist with their application following surgery. Wash and sterilize equipment, using germicides and sterilizers. Maintain files and records of surgical procedures.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
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<tr>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
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<td><strong>Average</strong></td>
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<tr>
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<tr>
<td><strong>Experienced</strong></td>
<td><strong>Experienced</strong></td>
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<tr>
<td>$19.66</td>
<td>$40,900</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**

- Certified Surgical Tech/First Assistant
- Certified Surgical Technician
- Certified Surgical Technologist (CST)
- Operating Room Surgical Technician (OR St)
- Operating Room Technician (OR Tech)
- Operating Room Technologist (OR Tech)
- Surgical Scrub Technician
- Surgical Scrub Technologist (Surgical Scrub Tech)
- Surgical Technician
- Surgical Technologist (Surgical Tech)

**Post-Secondary Institutions with Programs**

- Bevill State Community College
- Brown Mackie College-Birmingham
- Gadsden State Community College
- James H Faulkner State Community College
- John C Calhoun State Community College
- Lurleen B Wallace Community College
- Southern Union State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
17-3031 Surveying and Mapping Technicians

Perform surveying and mapping duties, usually under the direction of an engineer, surveyor, cartographer, or photogrammetrist to obtain data used for construction, mapping, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data, such as surveying notes, aerial photography, satellite data, or other maps to show topographical features, political boundaries, and other features. May verify accuracy and completeness of maps.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Search for section corners, property irons, and survey points. Adjust and operate surveying instruments such as prisms, theodolites, and electronic distance-measuring equipment. Conduct surveys to ascertain the locations of natural features and man-made structures on the Earth's surface, underground, and underwater, using electronic distance-measuring equipment and other surveying instruments. Collect information needed to carry out new surveys, using source maps, previous survey data, photographs, computer records, and other relevant information. Prepare topographic and contour maps of land surveyed, including site features and other relevant information, such as charts, drawings, and survey notes. Position and hold the vertical rods, or targets, that theodolite operators use for sighting to measure angles, distances, and elevations. Set out and recover stakes, marks, and other monumentation. Record survey measurements and descriptive data, using notes, drawings, sketches, and inked tracings. Compile information necessary to stake projects for construction, using engineering plans. Operate and manage land-information computer systems, performing tasks such as storing data, making inquiries, and producing plots and reports. Compare survey computations with applicable standards to determine adequacy of data. Maintain equipment and vehicles used by surveying crews. Lay out grids, and determine horizontal and vertical controls. Direct and supervise work of subordinate members of surveying parties. Run rods for benches and cross-section elevations. Perform calculations to determine earth curvature corrections, atmospheric impacts on measurements, traverse closures and adjustments, azimuths, level runs, and placement of markers. Provide assistance in the development of methods and procedures for conducting field surveys. Place and hold measuring tapes when electronic distance-measuring equipment is not used. Perform manual labor, such as cutting brush for lines, carrying stakes, rebar, and other heavy items, and stacking rods.

License: License Not Required.

Outlook: Satisfactory

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>Entry</td>
</tr>
<tr>
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</tr>
<tr>
<td>$20.05</td>
<td>$41,700</td>
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<tr>
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<td>Experienced</td>
</tr>
<tr>
<td>$23.67</td>
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<tr>
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</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Layout Workers, Metal and Plastic
Aircraft Mechanics and Service Technicians
Security and Fire Alarm Systems Installers
Freight and Cargo Inspectors
Environmental Science and Protection Technicians, Including Health
Boilermakers
Electric Motor, Power Tool, and Related Repairers
Pipe Fitters and Steamfitters
Chemical Plant and System Operators
Surveyors

Post-Secondary Institutions with Programs
Troy University

2018 Career Exploration Guide
See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Surveyors

Make exact measurements and determine property boundaries. Provide data relevant to the shape, contour, gravitation, location, elevation, or dimension of land or land features on or near the earth's surface for engineering, mapmaking, mining, land evaluation, construction, and other purposes.

Education: Most of these occupations typically require a four-year bachelor's degree.

OJT: Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Prepare or supervise preparation of all data, charts, plots, maps, records, and documents related to surveys. Direct or conduct surveys to establish legal boundaries for properties, based on legal deeds and titles. Prepare and maintain sketches, maps, reports, and legal descriptions of surveys to describe, certify, and assume liability for work performed. Write descriptions of property boundary surveys for use in deeds, leases, or other legal documents. Verify the accuracy of survey data, including measurements and calculations conducted at survey sites. Search legal records, survey records, and land titles to obtain information about property boundaries in areas to be surveyed. Compute geodetic measurements and interpret survey data to determine positions, shapes, and elevations of geomorphic and topographic features. Coordinate findings with the work of engineering and architectural personnel, clients, and others concerned with projects. Record the results of surveys including the shape, contour, location, elevation, and dimensions of land or land features. Determine longitudes and latitudes of important features and boundaries in survey areas, using theodolites, transits, levels, and satellite-based global positioning systems (GPS). Establish fixed points for use in making maps, using geodetic and engineering instruments. Train assistants and helpers, and direct their work in such activities as performing surveys or drafting maps. Analyze survey objectives and specifications to prepare survey proposals or to direct others in survey proposal preparation. Calculate heights, depths, relative positions, property lines, and other characteristics of terrain. Plan and conduct ground surveys designed to establish baselines, elevations, and other geodetic measurements. Adjust surveying instruments to maintain their accuracy. Conduct research in surveying and mapping methods using knowledge of techniques of photogrammetric map compilation and electronic data processing. Develop criteria for survey methods and procedures. Survey bodies of water to determine navigable channels and to secure data for construction of breakwaters, piers, and other marine structures. Locate and mark sites selected for geophysical prospecting activities such as efforts to locate petroleum or other mineral products. Determine specifications for photographic equipment to be used for aerial photography, as well as altitudes from which to photograph terrain. Direct aerial surveys of specified geographical areas. Testify as an expert witness in court cases on land survey issues, such as property boundaries. Develop criteria for the design and modification of survey instruments.

License: Application Fee: $50.00 License Fee: $75.00 Renewal Fee: $100.00 Examination Fee: $100.00

Outlook: Satisfactory

Alabama Wage Data

<table>
<thead>
<tr>
<th>Entry</th>
<th>$17.80</th>
<th>Entry</th>
<th>$37,020</th>
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<tbody>
<tr>
<td>Average</td>
<td>$27.04</td>
<td>Average</td>
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<tr>
<td>Experienced</td>
<td>$31.67</td>
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<td>$65,860</td>
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</table>

Alabama Projections

2016 Estimated Employment: 590
2026 Projected Employment: 640
Average Total Openings: 50
Annual Growth Rate: 0.82%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

City Surveyor
County Surveyor
Land Surveyor
Mine Surveyor
Registered Land Surveyor
Survey Manager
Survey Party Chief
Survey Project Manager
Survey Superintendent
Surveyor

Post-Secondary Institutions with Programs

Troy University

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
53-7121 Tank Car, Truck, and Ship Loaders

Load and unload chemicals and bulk solids, such as coal, sand, and grain into or from tank cars, trucks, or ships using material moving equipment. May perform a variety of other tasks relating to shipment of products. May gauge or sample shipping tanks and test them for leaks.

**Education:**  These occupations typically require a high school diploma.

**OJT:**  Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:**  Test samples for specific gravity, using hydrometers, or send samples to laboratories for testing. Copy and attach load specifications to loaded tanks. Lower gauge rods into tanks or read meters to verify contents, temperatures, and volumes of liquid loads. Operate conveyors and equipment to transfer grain or other materials from transportation vehicles. Seal outlet valves on tank cars, barges, and trucks. Test vessels for leaks, damage, and defects, and repair or replace defective parts as necessary. Clean interiors of tank cars or tank trucks, using mechanical spray nozzles. Connect ground cables to carry off static electricity when unloading tanker cars. Record operating data such as products and quantities pumped, gauge readings, and operating times, manually or using computers. Unload cars containing liquids by connecting hoses to outlet plugs and pumping compressed air into cars to force liquids into storage tanks. Verify tank car, barge, or truck load numbers to ensure car placement accuracy based on written or verbal instructions. Remove and replace tank car dome caps, or direct other workers in their removal and replacement. Perform general warehouse activities, such as opening containers and crates, filling warehouse orders, assisting in taking inventory, and weighing and checking materials. Operate ship loading and unloading equipment, conveyors, hoists, and other specialized material handling equipment such as railroad tank car unloading equipment. Observe positions of cars passing loading spouts, and swing spouts into the correct positions at the appropriate times. Start pumps and adjust valves or cables to regulate the flow of products to vessels, using knowledge of loading procedures. Operate industrial trucks, tractors, loaders and other equipment to transport materials to and from transportation vehicles and loading docks, and to store and retrieve materials in warehouses. Check conditions and weights of vessels to ensure cleanliness and compliance with loading procedures. Monitor product movement to and from storage tanks, coordinating activities with other workers to ensure constant product flow.

**License:**  License Not Required.

**Outlook:**  Satisfactory

### Alabama Employment Outlook

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<tr>
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<tbody>
<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
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<td>$38,930</td>
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<tr>
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<td>$45,550</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Bulk Tank Car Unloader
- Chemical Recovery Operator
- Load Out Person
- Loader
- Loader Operator
- Pumper
- PVC Loader (Polyvinyl Chloride Loader)
- Shipper
- Shipping and Receiving Operator
- Warehouse Man

### Post-Secondary Institutions with Programs

No postsecondary institutions with reported programs.
**13-2082 Tax Preparers**

Prepare tax returns for individuals or small businesses.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Consult tax law handbooks or bulletins to determine procedures for preparation of atypical returns. Use all appropriate adjustments, deductions, and credits to keep clients' taxes to a minimum. Answer questions and provide future tax planning to clients. Review financial records such as income statements and documentation of expenditures to determine forms needed to prepare tax returns. Explain federal and state tax laws to individuals and companies. Compute taxes owed or overpaid, using adding machines or personal computers, and complete entries on forms, following tax form instructions and tax tables. Furnish taxpayers with sufficient information and advice to ensure correct tax form completion. Prepare or assist in preparing simple to complex tax returns for individuals or small businesses. Check data input or verify totals on forms prepared by others to detect errors in arithmetic, data entry, or procedures. Interview clients to obtain additional information on taxable income and deductible expenses and allowances. Calculate form preparation fees according to return complexity and processing time required.

**License:** License Not Required.

**Outlook:** Satisfactory

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</tr>
</thead>
<tbody>
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<td><strong>Annual Wage</strong></td>
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</table>

| 2026 Projected Employment: | 870 |
| Average Total Openings:   | 95  |
| Annual Growth Rate:       | 0.72% |

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Certified Income Tax Preparer (CTP)
- Corporate Tax Preparer
- Enrolled Agent
- Income Tax Preparer
- Master Tax Advisor
- Tax Advisor
- Tax Associate
- Tax Consultant
- Tax Preparer
- Tax Specialist

**Post-Secondary Institutions with Programs**
- Bishop State Community College
- Gadsden State Community College
- George C Wallace State Community College-Hanceville
- H Councill Trenholm State Community College
- Herzing University-Birmingham
- J F Drake State Community and Technical College
- Jefferson State Community College
- Lawson State Community College-Birmingham Campus
- Northwest-Shoals Community College
- Sneed State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Taxi Drivers and Chauffeurs

Drive automobiles, vans, or limousines to transport passengers. May occasionally carry cargo. Includes hearse drivers.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Perform routine vehicle maintenance, such as regulating tire pressure and adding gasoline, oil, and water. Report to taxicab services or garages to receive vehicle assignments. Test vehicle equipment, such as lights, brakes, horns, or windshield wipers, to ensure proper operation. Drive taxicabs, limousines, company cars, or privately owned vehicles to transport passengers. Record name, date, and taxi identification information on trip sheets, along with trip information, such as time and place of pickup and drop-off, and total fee. Vacuum and clean interiors and wash and polish exteriors of automobiles. Determine fares based on trip distances and times, using taximeters and fee schedules, and announce fares to passengers. Arrange to pick up particular customers or groups on a regular schedule. Communicate with dispatchers by radio, telephone, or computer to exchange information and receive requests for passenger service. Pick up or meet employers according to requests, appointments, or schedules. Follow relevant safety regulations and state laws governing vehicle operation and ensure that passengers follow safety regulations. Operate vehicles with specialized equipment, such as wheelchair lifts, to transport and secure passengers with special needs. Provide passengers with assistance entering and exiting vehicles and help them with any luggage. Perform errands for customers or employers, such as delivering or picking up mail and packages. Notify dispatchers or company mechanics of vehicle problems. Provide passengers with information about the local area and points of interest or give advice on hotels and restaurants. Pick up passengers at prearranged locations, at taxi stands, or by cruising streets in high traffic areas. Turn the taximeter on when passengers enter the cab and turn it off when they reach the final destination. Collect fares or vouchers from passengers and make change or issue receipts as necessary. Perform minor vehicle repairs, such as cleaning spark plugs, or take vehicles to mechanics for servicing. Complete accident reports when necessary.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2016 Estimated Employment: 1,850</td>
</tr>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
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<td>Average</td>
<td>$11.51 Average</td>
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<tr>
<td>Experienced</td>
<td>$13.11 Experienced</td>
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<td></td>
<td>$17,280</td>
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<td></td>
<td>$23,930</td>
</tr>
<tr>
<td></td>
<td>$27,260</td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

**Related Occupations**
- Airport Shuttle Driver
- Cab Driver
- Chauffeur
- Driver
- Limo Driver (Limousine Driver)
- Motor Coach Driver
- Shuttle Driver
- Taxi Cab Driver
- Taxi Driver
- Van Driver

**Post-Secondary Institutions with Programs**

No postsecondary institutions with reported programs.
27-3042  Technical Writers
Write technical materials, such as equipment manuals, appendices, or operating and maintenance instructions. May assist in layout work.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

Tasks: Organize material and complete writing assignment according to set standards regarding order, clarity, conciseness, style, and terminology. Interview production and engineering personnel and read journals and other material to become familiar with product technologies and production methods. Maintain records and files of work and revisions. Study drawings, specifications, mockups, and product samples to integrate and delineate technology, operating procedure, and production sequence and detail. Draw sketches to illustrate specified materials or assembly sequence. Analyze developments in specific field to determine need for revisions in previously published materials and development of new material. Edit, standardize, or make changes to material prepared by other writers or establishment personnel. Select photographs, drawings, sketches, diagrams, and charts to illustrate material. Review manufacturer's and trade catalogs, drawings and other data relative to operation, maintenance, and service of equipment. Develop or maintain online help documentation. Arrange for typing, duplication, and distribution of material. Assist in laying out material for publication. Review published materials and recommend revisions or changes in scope, format, content, and methods of reproduction and binding. Confer with customer representatives, vendors, plant executives, or publisher to establish technical specifications and to determine subject material to be developed for publication. Observe production, developmental, and experimental activities to determine operating procedure and detail.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
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<tbody>
<tr>
<td>Entry</td>
<td>$21.92</td>
<td>Entry</td>
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<td>Average</td>
<td>$32.42</td>
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<td>$37.68</td>
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<td>$78,370</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Documentation Designer
Documentation Specialist
Engineering Writer
Expert Medical Writer
Information Developer
Narrative Writer
Requirements Analyst
Senior Technical Writer
Technical Communicator
Technical Writer

Post-Secondary Institutions with Programs
Auburn University
Oakwood University
Prince Institute - Southeast
Spring Hill College
University of Alabama - Huntsville

2018 Career Exploration Guide
47-2044 Tile and Marble Setters

Apply hard tile, marble, and wood tile to walls, floors, ceilings, and roof decks.

Education: These occupations typically require less than a high school diploma - or the equivalent.

OJT: Employees in these occupations usually need over 2 years, up to and including 4 years of work-related experience, on-the-job training and/or vocational training.

Tasks: Align and straighten tile using levels, squares, and straightedges. Finish and dress the joints and wipe excess grout from between tiles, using damp sponge. Mix, apply, and spread plaster, concrete, mortar, cement, mastic, glue or other adhesives to form a bed for the tiles, using brush, trowel and screed. Determine and implement the best layout to achieve a desired pattern. Select and order tile and other items to be installed, such as bathroom accessories, walls, panels, and cabinets, according to specifications. Cut and shape tile to fit around obstacles and into odd spaces and corners, using hand and power cutting tools. Prepare cost and labor estimates, based on calculations of time and materials needed for project. Prepare surfaces for tiling by attaching lath or waterproof paper, or by applying a cement mortar coat to a metal screen. Mix and apply mortar or cement to edges and ends of drain tiles to seal halves and joints. Brush glue onto manila paper on which design has been drawn and position tiles, finished side down, onto paper. Apply mortar to tile back, position the tile, and press or tap with trowel handle to affix tile to base. Assist customers in selection of tile and grout. Build underbeds and install anchor bolts, wires, and brackets. Study blueprints and examine surface to be covered to determine amount of material needed. Remove and replace cracked or damaged tile. Cut tile backing to required size, using shears. Measure and mark surfaces to be tiled, following blueprints. Apply a sealer to make grout stain- and water-resistant. Install and anchor fixtures in designated positions, using hand tools. Remove any old tile, grout and adhesive using chisels and scrapers and clean the surface carefully. Level concrete and allow to dry. Lay and set mosaic tiles to create decorative wall, mural, and floor designs. Cut, surface, polish, and install marble and granite or install pre-cast terrazzo, granite or marble units. Spread mastic or other adhesive base on roof deck to form base for promenade tile, using serrated spreader. Prepare surfaces for tiling by attaching lath or waterproof paper, or by applying a cement mortar coat to a metal screen. Mix and apply mortar or cement to edges and ends of drain tiles to seal halves and joints. Brush glue onto manila paper on which design has been drawn and position tiles, finished side down, onto paper. Apply mortar to tile back, position the tile, and press or tap with trowel handle to affix tile to base. Assist customers in selection of tile and grout. Build underbeds and install anchor bolts, wires, and brackets. Study blueprints and examine surface to be covered to determine amount of material needed. Remove and replace cracked or damaged tile. Cut tile backing to required size, using shears. Measure and mark surfaces to be tiled, following blueprints. Apply a sealer to make grout stain- and water-resistant. Install and anchor fixtures in designated positions, using hand tools. Remove any old tile, grout and adhesive using chisels and scrapers and clean the surface carefully. Level concrete and allow to dry. Lay and set mosaic tiles to create decorative wall, mural, and floor designs. Cut, surface, polish, and install marble and granite or install pre-cast terrazzo, granite or marble units. Spread mastic or other adhesive base on roof deck to form base for promenade tile, using serrated spreader. Measure and cut metal lath to size for walls and ceilings, using tin snips.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<th>Alabama Wage Data</th>
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</tr>
</thead>
<tbody>
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<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>$10.93</td>
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<td>Average</td>
<td>$18.68</td>
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<tr>
<td>Experienced</td>
<td>$22.55</td>
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</tbody>
</table>

**2026 Projected Employment:** 420
**Average Total Openings:** 40
**Annual Growth Rate:** 1.01%

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Ceramic Tile Mechanic
Ceramic Tile Setter
Marble Mason
Tile and Marble Installer
Tile and Marble Setter
Tile Finisher
Tile Installer
Tile Mason
Tile Mechanic
Tile Setter

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Tool and Die Makers

Analyze specifications, lay out metal stock, set up and operate machine tools, and fit and assemble parts to make and repair dies, cutting tools, jigs, fixtures, gauges, and machinists' hand tools.

**Education:** Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

**OJT:** Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Visualize and compute dimensions, sizes, shapes, and tolerances of assemblies, based on specifications. Set up and operate drill presses to drill and tap holes in parts for assembly. Conduct test runs with completed tools or dies to ensure that parts meet specifications, making adjustments as necessary. Verify dimensions, alignments, and clearances of finished parts for conformance to specifications, using measuring instruments such as calipers, gauge blocks, micrometers, or dial indicators. Smooth and polish flat and contoured surfaces of parts or tools, using scrapers, abrasive stones, files, emery cloths, or power grinders. Lift, position, and secure machined parts on surface plates or worktables, using hoists, vises, v-blocks, or angle plates. Set up and operate conventional or computer numerically controlled machine tools such as lathes, milling machines, or grinders to cut, bore, grind, or otherwise shape parts to prescribed dimensions and finishes. Set pyrometer controls of heat-treating furnaces and feed or place parts, tools, or assemblies into furnaces to harden. Inspect finished dies for smoothness, contour conformity, and defects. File, grind, shim, and adjust different parts to properly fit them together. Fit and assemble parts to make, repair, or modify dies, jigs, gauges, and tools, using machine tools and hand tools. Study blueprints, sketches, models, or specifications to plan sequences of operations for fabricating tools, dies, or assemblies. Select metals to be used from a range of metals and alloys, based on properties such as hardness or heat tolerance. Cut, shape, and trim blanks or blocks to specified lengths or shapes, using power saws, power shears, rules, and hand tools. Measure, mark, and scribe metal or plastic stock to lay out machining, using instruments such as protractors, micrometers, scribes, or rulers. Design jigs, fixtures, and templates for use as work aids in the fabrication of parts or products. Develop and design new tools and dies, using computer-aided design software.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tr>
<td><strong>Hourly Wage</strong></td>
<td><strong>Annual Wage</strong></td>
</tr>
<tr>
<td>Entry</td>
<td>$17.22 Entry</td>
</tr>
<tr>
<td>Average</td>
<td>$25.23 Average</td>
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<tr>
<td>Experienced</td>
<td>$29.24 Experienced</td>
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<tr>
<th><strong>Alabama Wage Data</strong></th>
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<tbody>
<tr>
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<td><strong>Average</strong></td>
</tr>
<tr>
<td>$17.22</td>
<td>$25.23</td>
</tr>
<tr>
<td>$29.24</td>
<td><strong>Annual Wage</strong></td>
</tr>
</tbody>
</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Aircraft Tool Maker
- Carbide Tool Die Maker
- Die Maker
- Jig and Fixture Builder
- Jig and Fixture Repairer
- Tool and Die Machinist
- Tool and Die Maker
- Tool Repairer
- Toolmaker
- Trim Die Maker

### Post-Secondary Institutions with Programs

- Bevill State Community College
- Bishop State Community College
- Gadsden State Community College
- George C Wallace State Community College-Hanceville
- J F Drake State Community and Technical College
- Lawson State Community College-Birmingham Campus
- Northeast Alabama Community College
- Shelton State Community College

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Tour and Travel Guides
Escort individuals or groups on sightseeing tours or through places of interest, such as industrial establishments, public buildings, and art galleries.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Assemble and check the required supplies and equipment prior to departure. Greet and register visitors, and issue any required identification badges or safety devices. Solicit tour patronage and sell souvenirs. Describe tour points of interest to group members, and respond to questions. Provide directions and other pertinent information to visitors. Provide information about wildlife varieties and habitats, as well as any relevant regulations, such as those pertaining to hunting and fishing. Distribute brochures, show audiovisual presentations, and explain establishment processes and operations at tour sites. Drive motor vehicles to transport visitors to establishments and tour site locations. Speak foreign languages to communicate with foreign visitors. Escort individuals or groups on cruises, sightseeing tours, or through places of interest such as industrial establishments, public buildings, or art galleries. Perform clerical duties, such as filing, typing, operating switchboards, or routing mail and messages. Monitor visitors' activities to ensure compliance with establishment or tour regulations and safety practices. Collect fees and tickets from group members. Research various topics, including site history, environmental conditions, and clients' skills and abilities to plan appropriate expeditions, instruction, and commentary. Select travel routes and sites to be visited based on knowledge of specific areas. Provide for physical safety of groups, performing such activities as providing first aid or directing emergency evacuations. Conduct educational activities for school children. Train other guides and volunteers. Teach skills, such as proper climbing methods, and demonstrate and advise on the use of equipment.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Hourly Wage</th>
<th>Annual Wage</th>
<th>2016 Estimated Employment:</th>
<th>2026 Projected Employment:</th>
<th>Average Total Openings:</th>
<th>Annual Growth Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry</td>
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<td>Entry $17,290</td>
<td>$17,290</td>
<td>380</td>
<td>420</td>
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<tr>
<td>Average</td>
<td>$11.83</td>
<td>Average $24,610</td>
<td>$24,610</td>
<td>75</td>
<td>1.01%</td>
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<tr>
<td>Experienced</td>
<td>$13.59</td>
<td>Experienced $28,270</td>
<td>$28,270</td>
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</table>

For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Discovery Guide
Docent
Guide
Historical Interpreter
Interpreter
Museum Educator
Museum Guide
Science Interpreter
Tour Escort
Tour Guide

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
**Training and Development Specialists**

Design and conduct training and development programs to improve individual and organizational performance. May analyze training needs.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need over 1 month, up to and including 3 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Monitor, evaluate, or record training activities or program effectiveness. Schedule classes based on availability of classrooms, equipment, or instructors. Present information using a variety of instructional techniques or formats, such as role playing, simulations, team exercises, group discussions, videos, or lectures. Select and assign instructors to conduct training. Keep up with developments in area of expertise by reading current journals, books, or magazine articles. Design, plan, organize, or direct orientation and training programs for employees or customers. Evaluate training materials prepared by instructors, such as outlines, text, or handouts. Offer specific training programs to help workers maintain or improve job skills. Obtain, organize, or develop training procedure manuals, guides, or course materials, such as handouts or visual materials. Evaluate modes of training delivery, such as in-person or virtual to optimize training effectiveness, training costs, or environmental impacts. Assess training needs through surveys, interviews with employees, focus groups, or consultation with managers, instructors, or customer representatives. Develop alternative training methods if expected improvements are not seen. Refer trainees to employer relations representatives, to locations offering job placement assistance, or to appropriate social services agencies if warranted. Monitor training costs and prepare budget reports to justify expenditures. Attend meetings or seminars to obtain information for use in training programs or to inform management of training program status. Coordinate recruitment and placement of training program participants. Devise programs to develop executive potential among employees in lower-level positions. Negotiate contracts with clients including desired training outcomes, fees, or expenses. Supervise, evaluate, or refer instructors to skill development classes. Develop or implement training programs related to efficiency, recycling, or other issues with environmental impacts.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<td><strong>Annual Wage</strong></td>
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<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>Average</td>
<td>Average</td>
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<tr>
<td>Experienced</td>
<td>Experienced</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Computer Training Specialist
- Corporate Trainer
- E-Learning Developer
- Job Training Specialist
- Management Development Specialist
- Senior Instructor
- Supervisory Training Specialist
- Technical Trainer
- Trainer
- Training Specialist

### Post-Secondary Institutions with Programs

- Samford University

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
53-6051  Transportation Inspectors

Inspect equipment or goods in connection with the safe transport of cargo or people. Includes rail transportation inspectors, such as freight inspectors; rail inspectors; and other inspectors of transportation vehicles, not elsewhere classified.

Education:  Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Inspect vehicles or other equipment for evidence of abuse, damage, or mechanical malfunction. Inspect vehicles or equipment to ensure compliance with rules, standards, or regulations. Inspect repairs to transportation vehicles or equipment to ensure that repair work was performed properly. Identify modifications to engines, fuel systems, emissions control equipment, or other vehicle systems to determine the impact of modifications on inspection procedures or conclusions. Perform low-pressure fuel evaluative tests (LPFET) to test for harmful emissions from vehicles without onboard diagnostics (OBD) equipment. Conduct remote inspections of motor vehicles, using handheld controllers and remotely directed vehicle inspection devices. Prepare reports on investigations or inspections and actions taken. Issue notices and recommend corrective actions when infractions or problems are found. Compare emissions findings with applicable emissions standards. Investigate and make recommendations on carrier requests for waiver of federal standards. Conduct visual inspections of emission control equipment and smoke emitted from gasoline or diesel vehicles. Conduct vehicle or transportation equipment tests, using diagnostic equipment. Identify emissions testing procedures and standards appropriate for the age and technology of vehicles. Investigate incidents or violations, such as delays, accidents, and equipment failures. Negotiate with authorities, such as local government officials, to eliminate hazards along transportation routes. Review commercial vehicle logs, shipping papers, or driver and equipment records to detect any problems or to ensure compliance with regulations. Attach onboard diagnostics (OBD) scanner cables to vehicles to conduct emissions inspections. Investigate complaints regarding safety violations. Examine carrier operating rules, employee qualification guidelines, or carrier training and testing programs for compliance with regulations or safety standards.

License: License Not Required.

Outlook: Excellent

Alabama Employment Outlook

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<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry $24.33</td>
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<td>Experienced</td>
<td>$32.83 $37.08</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Cooling and Freezing Equipment Operators and Tenders
- Control and Valve Installers and Repairers, Except Mechanical Door
- Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
- Security and Fire Alarm Systems Installers
- Woodworking Machine Setters, Operators, and Tenders, Except Sawing
- Mixing and Blending Machine Setters, Operators, and Tenders
- Printing Press Operators
- Maintenance Workers, Machinery
- Radio Mechanics
- Semiconductor Processors

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide
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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Transportation, Storage, and Distribution Managers

Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with organizational policies and applicable government laws or regulations. Includes logistics managers.

Education: Most of these occupations require a four-year bachelor's degree, but some do not.

OJT: Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks: Supervise the activities of workers engaged in receiving, storing, testing, and shipping products or materials. Plan, develop, or implement warehouse safety and security programs and activities. Inspect physical conditions of warehouses, vehicle fleets, or equipment and order testing, maintenance, repairs, or replacements. Respond to customers' or shippers' questions and complaints regarding storage and distribution services. Develop and document standard and emergency operating procedures for receiving, handling, storing, shipping, or salvaging products or materials. Review invoices, work orders, consumption reports, or demand forecasts to estimate peak delivery periods and to issue work assignments. Monitor inventory levels of products or materials in warehouses. Develop storage and distribution models that include factors such as warehouse locations, customer locations, or available transportation modes to maximize operational efficiency or sustainability. Track and trace goods while they are en route to their destinations, expediting orders when necessary. Participate in setting transportation and service rates. Prepare and manage departmental budgets. Issue shipping instructions and provide routing information to ensure that delivery times and locations are coordinated. Evaluate locations for new warehouses or distribution networks to determine their potential usefulness. Examine products or materials to estimate quantities or weight and type of container required for storage or transport. Interview, select, and train warehouse and supervisory personnel. Advise sales and billing departments of transportation charges for customers' accounts. Prepare or direct preparation of correspondence, reports, and operations, maintenance, and safety manuals. Arrange for necessary shipping documentation and contact customs officials to effect release of shipments. Confer with department heads to coordinate warehouse activities, such as production, sales, records control, or purchasing. Arrange for storage facilities when required. Examine invoices and shipping manifests for conformity to tariff and customs regulations. Evaluate contractors or business partners for operational efficiency or safety or environmental performance records. Negotiate with carriers, warehouse operators, or insurance company representatives for services and preferential rates.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$22.77</td>
<td>$47,350</td>
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<td>Average</td>
</tr>
<tr>
<td>$41.86</td>
<td>$87,060</td>
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<tr>
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<td>Experienced</td>
</tr>
<tr>
<td>$51.40</td>
<td>$106,920</td>
</tr>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Buyers and Purchasing Agents, Farm Products
Supply Chain Managers
Transportation Managers
Appraisers, Real Estate
First-Line Supervisors of Construction Trades and Extraction Workers
Meeting, Convention, and Event Planners
Postmasters and Mail Superintendents
Lodging Managers
Industrial Production Managers
Administrative Services Managers

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
19-3051 Urban and Regional Planners

Develop comprehensive plans and programs for use of land and physical facilities of jurisdictions, such as towns, cities, counties, and metropolitan areas.

**Education:** Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

**OJT:** Employees in these occupations usually need over 6 months, up to and including 1 year of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Supervise or coordinate the work of urban planning technicians or technologists. Design, promote, or administer government plans or policies affecting land use, zoning, public utilities, community facilities, housing, or transportation. Recommend approval, denial, or conditional approval of proposals. Assess the feasibility of land use proposals and identify necessary changes. Advise planning officials on project feasibility, cost-effectiveness, regulatory conformance, or possible alternatives. Advocate for sustainability to community groups, government agencies, the general public, or special interest groups. Conduct field investigations, surveys, impact studies, or other research to compile and analyze data on economic, social, regulatory, or physical factors affecting land use. Keep informed about economic or legal issues involved in zoning codes, building codes, or environmental regulations. Discuss with planning officials the purpose of land use projects, such as transportation, conservation, residential, commercial, industrial, or community use. Hold public meetings with government officials, social scientists, lawyers, developers, the public, or special interest groups to formulate, develop, or address issues regarding land use or community plans. Create, prepare, or requisition graphic or narrative reports on land use data, including land area maps overlaid with geographic variables such as population density. Determine the effects of regulatory limitations on land use projects. Review and evaluate environmental impact reports pertaining to private or public planning projects or programs. Develop plans for public or alternative transportation systems for urban or regional locations to reduce carbon output associated with transportation. Mediate community disputes or assist in developing alternative plans or recommendations for programs or projects. Coordinate work with economic consultants or architects during the formulation of plans or the design of large pieces of infrastructure. Identify opportunities or develop plans for sustainability projects or programs to improve energy efficiency, minimize pollution or waste, or restore natural systems. Investigate property availability for purposes of development. Evaluate proposals for infrastructure projects or other development for environmental impact or sustainability.

**License:** License Not Required.

**Outlook:** Satisfactory

### Alabama Employment Outlook

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<tbody>
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<td>Annual Wage</td>
</tr>
<tr>
<td>Entry</td>
<td>$19.64</td>
<td>$40,860</td>
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<tr>
<td>Average</td>
<td>$28.86</td>
<td>$60,020</td>
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<td>Experienced</td>
<td>$33.46</td>
<td>$69,600</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- City Planner
- Community Development Director
- Community Development Planner
- Housing Development Specialist
- Housing Grant Analyst
- Neighborhood Planner
- Planner
- Planning Director
- Regional Planner
- Urban Design Consultant

### Post-Secondary Institutions with Programs
- Alabama A & M University
- Auburn University

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Veterinarians
Diagnose, treat, or research diseases and injuries of animals. Includes veterinarians who conduct research and development, inspect livestock, or care for pets and companion animals.

Education: Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Examine animals to detect and determine the nature of diseases or injuries. Euthanize animals. Inoculate animals against various diseases, such as rabies or distemper. Direct the overall operations of animal hospitals, clinics, or mobile services to farms. Treat sick or injured animals by prescribing medication, setting bones, dressing wounds, or performing surgery. Collect body tissue, feces, blood, urine, or other body fluids for examination and analysis. Counsel clients about the deaths of their pets or about euthanasia decisions for their pets. Advise animal owners regarding sanitary measures, feeding, general care, medical conditions, or treatment options. Specialize in a particular type of treatment, such as dentistry, pathology, nutrition, surgery, microbiology, or internal medicine. Operate diagnostic equipment, such as radiographic or ultrasound equipment, and interpret the resulting images. Determine the effects of drug therapies, antibiotics, or new surgical techniques by testing them on animals. Perform administrative or business management tasks, such as scheduling appointments, accepting payments from clients, budgeting, or maintaining business records. Educate the public about diseases that can be spread from animals to humans. Plan or execute animal nutrition or reproduction programs. Research diseases to which animals could be susceptible. Train or supervise workers who handle or care for animals. Drive mobile clinic vans to farms so that health problems can be treated or prevented. Provide care to a wide range of animals or specialize in a particular species, such as horses or exotic birds. Inspect and test horses, sheep, poultry, or other animals to detect the presence of communicable diseases. Inspect animal housing facilities to determine their cleanliness and adequacy. Establish or conduct quarantine or testing procedures that prevent the spread of diseases to other animals or to humans and that comply with applicable government regulations. Conduct postmortem studies and analyses to determine the causes of animals' deaths. Attend lectures, conferences, or continuing education courses.

License: Application Fee: $250.00 Renewal Fee: $200.00 State Controlled Substance Registration Fee: $35.00 Annual Premise Renewal Payment Fee: $150.00 Inactive Status Fee: $100.00 New Premise Inspection Fee: $200.00

Outlook: Good

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
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</thead>
<tbody>
<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry $29.29</td>
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<tr>
<td></td>
<td>Annual Growth Rate: 1.52%</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Associate Veterinarian
Doctor of Veterinary Medicine (DVM)
Emergency Veterinarian
Equine Vet (Equine Veterinarian)
Mixed Animal Veterinarian
Small Animal Veterinarian
Staff Veterinarian
Veterinarian (VET)
Veterinary Medicine Doctor (DVM)
Veterinary Surgeon

Post-Secondary Institutions with Programs
Auburn University
Tuskegee University

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Veterinary Assistants and Laboratory Animal Caretakers

Feed, water, and examine pets and other nonfarm animals for signs of illness, disease, or injury in laboratories and animal hospitals and clinics. Clean and disinfect cages and work areas, and sterilize laboratory and surgical equipment. May provide routine post-operative care, administer medication orally or topically, or prepare samples for laboratory examination under the supervision of veterinary or laboratory animal technologists or technicians, veterinarians, or scientists.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Hold or restrain animals during veterinary procedures. Prepare examination or treatment rooms by stocking them with appropriate supplies. Assist veterinarians in examining animals to determine the nature of illnesses or injuries. Clean, maintain, and sterilize instruments or equipment. Administer medication, immunizations, or blood plasma to animals as prescribed by veterinarians. Record information relating to animal genealogy, feeding schedules, appearance, behavior, or breeding. Fill medication prescriptions. Provide assistance with euthanasia of animals or disposal of corpses. Clean and maintain kennels, animal holding areas, examination or operating rooms, or animal loading or unloading facilities to control the spread of disease. Collect laboratory specimens, such as blood, urine, or feces, for testing. Administer anesthetics during surgery and monitor the effects on animals. Examine animals to detect behavioral changes or clinical symptoms that could indicate illness or injury. Sell pet food or supplies to customers. Prepare feed for animals according to specific instructions, such as diet lists or schedules. Exercise animals or provide them with companionship. Perform routine laboratory tests or diagnostic tests, such as taking or developing x-rays. Write reports, maintain research information, or perform clerical duties. Perform enemas, catheterizations, ear flushes, intravenous feedings, or gavages. Perform hygiene-related duties, such as clipping animals' claws or cleaning and polishing teeth. Prepare surgical equipment and pass instruments or materials to veterinarians during surgical procedures. Educate or advise clients on animal health care, nutrition, or behavior problems. Perform office reception duties, such as scheduling appointments or helping customers. Monitor animals recovering from surgery and notify veterinarians of any unusual changes or symptoms. Provide emergency first aid to sick or injured animals. Perform accounting duties, such as bookkeeping, billing customers for services, or maintaining inventories. Groom, trim, or clip animals' coats. Dust, spray, or bathe animals to control insect pests.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

<table>
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<td>$26,240</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Animal Care Provider
- Animal Caregiver
- Avian Keeper
- Emergency Veterinary Assistant
- Research Animal Attendant
- Small Animal Caretaker
- Technician Assistant
- Veterinarian Assistant
- Veterinary Assistant (Veterinarian Assistant)
- Veterinary Technician Assistant (Vet Tech Assistant)

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Veterinary Technologists and Technicians

Perform medical tests in a laboratory environment for use in the treatment and diagnosis of diseases in animals. Prepare vaccines and serums for prevention of diseases. Prepare tissue samples, take blood samples, and execute laboratory tests, such as urinalysis and blood counts. Clean and sterilize instruments and materials and maintain equipment and machines. May assist a veterinarian during surgery.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

Tasks: Restrain animals during exams or procedures. Take animals into treatment areas and assist with physical examinations by performing such duties as obtaining temperature, pulse, or respiration data. Clean kennels, animal holding areas, surgery suites, examination rooms, or animal loading or unloading facilities to control the spread of disease. Monitor medical supplies and place orders when inventory is low. Maintain instruments, equipment, or machinery to ensure proper working condition. Fill prescriptions, measuring medications and labeling containers. Collect, prepare, and label samples for laboratory testing, culture, or microscopic examination. Maintain controlled drug inventory and related log books. Perform dental work, such as cleaning, polishing, or extracting teeth. Prepare and administer medications, vaccines, serums, or treatments, as prescribed by veterinarians. Clean and sterilize instruments, equipment, or materials. Provide veterinarians with the correct equipment or instruments, as needed. Observe the behavior and condition of animals and monitor their clinical symptoms. Provide assistance with animal euthanasia and the disposal of remains. Care for and monitor the condition of animals recovering from surgery. Schedule appointments and procedures for animals. Give enemas and perform catheterizations, ear flushes, intravenous feedings, or gavages. Administer anesthesia to animals, under the direction of a veterinarian, and monitor animals’ responses to anesthetics so that dosages can be adjusted. Take and develop diagnostic radiographs, using x-ray equipment. Prepare treatment rooms for surgery. Perform laboratory tests on blood, urine, or feces, such as urinalyses or blood counts, to assist in the diagnosis and treatment of animal health problems. Discuss medical health of pets with clients, such as post-operative status. Bathe animals, clip nails or claws, and brush or cut animals' hair. Dress and suture wounds and apply splints or other protective devices. Provide information or counseling regarding issues such as animal health care, behavior problems, or nutrition. Maintain laboratory, research, or treatment records, as well as inventories of pharmaceuticals, equipment, or supplies. Prepare animals for surgery, performing such tasks as shaving surgical areas.

License: Application Fee: $100.00 Active Renewal Fee: $75.00 Examination Fee: $310.00 Inactive Renewal Fee: $37.50

Outlook: Good

### Alabama Wage Data

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<td>$23,650</td>
<td>$30,940</td>
<td>$34,590</td>
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### Alabama Projections

- **2016 Estimated Employment:** 1,000
- **2026 Projected Employment:** 1,160
- **Average Total Openings:** 100
- **Annual Growth Rate:** 1.50%

### Related Occupations
- Certified Veterinary Technician (CVT)
- Emergency Veterinary Technician
- Internal Medicine Veterinary Technician
- Licensed Veterinary Technician (LVT)
- Medical Technologist
- Registered Veterinary Technician (RVT)
- Veterinary Assistant
- Veterinary Laboratory Technician (Veterinary Lab Tech)
- Veterinary Nurse
- Veterinary Technician (Vet Tech)

### Post-Secondary Institutions with Programs
- James H Faulkner State Community College
- Jefferson State Community College
- Ross Medical Education Center-Huntsville
- Tuskegee University

For an explanation on omitted data, see the Missing Data section in the introduction.
Waiters and Waitresses

Take orders and serve food and beverages to patrons at tables in dining establishment.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks: Take orders from patrons for food or beverages. Collect payments from customers. Check with customers to ensure that they are enjoying their meals and take action to correct any problems. Write patrons' food orders on order slips, memorize orders, or enter orders into computers for transmittal to kitchen staff. Prepare checks that itemize and total meal costs and sales taxes. Present menus to patrons and answer questions about menu items, making recommendations upon request. Remove dishes and glasses from tables or counters and take them to kitchen for cleaning. Inform customers of daily specials. Clean tables or counters after patrons have finished dining. Serve food or beverages to patrons, and prepare or serve specialty dishes at tables as required. Prepare hot, cold, and mixed drinks for patrons, and chill bottles of wine. Fill salt, pepper, sugar, cream, condiment, and napkin containers. Explain how various menu items are prepared, describing ingredients and cooking methods. Perform cleaning duties, such as sweeping and mopping floors, vacuuming carpet, tidying up server station, taking out trash, or checking and cleaning bathroom. Check patrons' identification to ensure that they meet minimum age requirements for consumption of alcoholic beverages. Garnish and decorate dishes in preparation for serving. Bring wine selections to tables with appropriate glasses, and pour the wines for customers. Prepare tables for meals, including setting up items such as linens, silverware, and glassware. Assist host or hostess by answering phones to take reservations or to-go orders, and by greeting, seating, and thanking guests. Stock service areas with supplies such as coffee, food, tableware, and linens. Roll silverware, set up food stations, or set up dining areas to prepare for the next shift or for large parties. Describe and recommend wines to customers. Perform food preparation duties such as preparing salads, appetizers, and cold dishes, portioning desserts, and brewing coffee. Provide guests with information about local areas, including giving directions. Escort customers to their tables.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

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<td>2016 Estimated Employment: 6,615</td>
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<td>Experienced</td>
<td>Annual Growth Rate: 0.79%</td>
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<tr>
<td>Experienced</td>
<td>$10.39</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
Banquet Server
Buffet Server
Cocktail Server
Food Runner
Food Server
Restaurant Server
Server
Waiter
Waitress
Waitstaff

Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
**15-1134 Web Developers**

Design, create, and modify Web sites. Analyze user needs to implement Web site content, graphics, performance, and capacity. May integrate Web sites with other computer applications. May convert written, graphic, audio, and video components to compatible Web formats by using software designed to facilitate the creation of Web and multimedia content.

**Education:** Most of these occupations typically require a four-year bachelor's degree.

**OJT:** Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

**Tasks:**
- Back up files from Web sites to local directories for instant recovery in case of problems. Write, design, or edit Web page content, or direct others producing content. Evaluate code to ensure that it is valid, is properly structured, meets industry standards, and is compatible with browsers, devices, or operating systems. Design, build, or maintain Web sites, using authoring or scripting languages, content creation tools, management tools, and digital media. Identify problems uncovered by testing or customer feedback, and correct problems or refer problems to appropriate personnel for correction. Write supporting code for Web applications or Web sites. Perform or direct Web site updates. Maintain understanding of current Web technologies or programming practices through continuing education, reading, or participation in professional conferences, workshops, or groups. Respond to user email inquiries, or set up automated systems to send responses. Confer with management or development teams to prioritize needs, resolve conflicts, develop content criteria, or choose solutions. Collaborate with management or users to develop e-commerce strategies and to integrate these strategies with Web sites. Document test plans, testing procedures, or test results. Develop databases that support Web applications and Web sites. Perform Web site tests according to planned schedules, or after any Web site or product revision. Document technical factors such as server load, bandwidth, database performance, and browser and device types. Incorporate technical considerations into Web site design plans, such as budgets, equipment, performance requirements, or legal issues including accessibility and privacy. Recommend and implement performance improvements. Monitor security system performance logs to identify problems and notify security specialists when problems occur. Develop and document style guidelines for Web site content. Develop or validate test routines and schedules to ensure that test cases mimic external interfaces and address all browser and device types. Register Web sites with search engines to increase Web site traffic. Develop Web site maps, application models, image templates, or page templates that meet project goals, user needs, or industry standards. Develop or implement procedures for ongoing Web site revision. Design and implement Web site security measures, such as firewalls or message encryption.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<td><strong>Hourly Wage</strong></td>
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<td>Average</td>
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<tr>
<td>$33.81</td>
<td>$70,330</td>
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**2016 Estimated Employment:** 790

**2026 Projected Employment:** 910

**Average Total Openings:** 70

**Annual Growth Rate:** 1.42%

For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations
- Designer
- Technology Applications Engineer
- Web Architect
- Web Design Specialist
- Web Designer
- Web Developer
- Web Development Director
- Web Development Instructor
- Webmaster

### Post-Secondary Institutions with Programs
No postsecondary institutions with reported programs.
Welders, Cutters, Solderers, and Brazers

Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.

Education: Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.

OJT: Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.

Tasks: Weld components in flat, vertical, or overhead positions. Operate safety equipment and use safe work habits. Lay out, position, align, and secure parts and assemblies prior to assembly, using straightedges, combination squares, calipers, and rulers. Examine workpieces for defects and measure workpieces with straightedges or templates to ensure conformance with specifications. Recognize, set up, and operate hand and power tools common to the welding trade, such as shielded metal arc and gas metal arc welding equipment. Weld separately or in combination, using aluminum, stainless steel, cast iron, and other alloys. Clamp, hold, tack-weld, heat-bend, grind or bolt component parts to obtain required configurations and positions for welding. Select and install torches, torch tips, filler rods, and flux, according to welding chart specifications or types and thicknesses of metals. Ignite torches or start power supplies and strike arcs by touching electrodes to metals being welded, completing electrical circuits. Determine required equipment and welding methods, applying knowledge of metallurgy, geometry, and welding techniques. Monitor the fitting, burning, and welding processes to avoid overheating of parts or warping, shrinking, distortion, or expansion of material. Operate manual or semi-automatic welding equipment to fuse metal segments, using processes such as gas tungsten arc, gas metal arc, flux-cored arc, plasma arc, shielded metal arc, resistance welding, and submerged arc welding. Analyze engineering drawings, blueprints, specifications, sketches, work orders, and material safety data sheets to plan layout, assembly, and welding operations. Mark or tag material with proper job number, piece marks, and other identifying marks as required. Chip or grind off excess weld, slag, or spatter, using hand scrapers or power chippers, portable grinders, or arc-cutting equipment. Prepare all material surfaces to be welded, ensuring that there is no loose or thick scale, slag, rust, moisture, grease, or other foreign matter. Develop templates and models for welding projects, using mathematical calculations based on blueprint information.

License: License Not Required.

Outlook: Good

Alabama Employment Outlook

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<tr>
<td>Annual Wage</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations

Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
Printing Press Operators
Print Binding and Finishing Workers
Model Makers, Metal and Plastic
Sawing Machine Setters, Operators, and Tenders, Wood
Roofers
Cutters and Trimmers, Hand
Solderers and Brazers
Floor Layers, Except Carpet, Wood, and Hard Tiles
Forging Machine Setters, Operators, and Tenders, Metal and Plastic

Post-Secondary Institutions with Programs

Bevill State Community College
Bishop State Community College
Central Alabama Community College
Gadsden State Community College
George C Wallace Community College
H Councill Trenholm State Community College
J F Drake State Community and Technical College
J F Ingram State Technical College
James H Faulkner State Community College
John C Calhoun State Community College
Lawson State Community College-Birmingham Campus
Lurleen B Wallace Community College
Northeast Alabama Community College
Northwest-Shoals Community College
Reid State Technical College
Shelton State Community College
Southern Union State Community College

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See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies. Includes workers who operate laser cutters or laser-beam machines.

**Education:** These occupations typically require a high school diploma.

**OJT:** Employees in these occupations usually need over 3 months, up to and including 6 months of work-related experience, on-the-job training and/or vocational training.

**Tasks:** Select torch tips, alloys, flux, coil, tubing, or wire, according to metal types or thicknesses, data charts, or records. Set up, operate, or tend welding machines that join or bond components to fabricate metal products or assemblies. Assemble, align, and clamp workpieces into holding fixtures to bond, heat-treat, or solder fabricated metal components. Set dials and timing controls to regulate electrical current, gas flow pressure, heating or cooling cycles, or shut-off. Read blueprints, work orders, or production schedules to determine product or job instructions or specifications. Inspect, measure, or test completed metal workpieces to ensure conformance to specifications, using measuring and testing devices. Lay out, fit, or connect parts to be bonded, calculating production measurements as necessary. Prepare metal surfaces or workpieces, using hand-operated equipment, such as grinders, cutters, or drills. Clean, lubricate, maintain, and adjust equipment to maintain efficient operation, using air hoses, cleaning fluids, and hand tools. Record operational information on specified production reports. Select, position, align, and bolt jigs, holding fixtures, guides, or stops onto machines, using measuring instruments and hand tools. Mark weld points and positions of components on workpieces, using rules, squares, templates, or scribes. Load or feed workpieces into welding machines to join or bond components. Turn and press knobs and buttons or enter operating instructions into computers to adjust and start welding machines. Anneal finished workpieces to relieve internal stress. Transfer components, metal products, or assemblies, using moving equipment. Tend auxiliary equipment used in welding processes. Observe meters, gauges, or machine operations to ensure that soldering or brazing processes meet specifications. Fill hoppers and position spouts to direct flow of flux or manually brush flux onto seams of workpieces. Correct problems by adjusting controls or by stopping machines and opening holding devices.

**License:** License Not Required.

**Outlook:** Good

### Alabama Employment Outlook

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<tr>
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<th>Alabama Projections</th>
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<td><strong>Annual Wage</strong></td>
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<tr>
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For an explanation on omitted data, see the Missing Data section in the introduction.

### Related Occupations

- Braze Operator
- Fabricator
- Finishing Technician
- Fitter-Welder
- Machine Operator
- Mig Welder Operator
- Robot Operator
- Spot Welder
- Technical Associate (TA)

### Post-Secondary Institutions with Programs

- Alabama Southern Community College
- Bevill State Community College
- Bishop State Community College
- Central Alabama Community College
- Gadsden State Community College
- George C Wallace Community College
- H Councill Trenholm State Technical College
- J F Drake State Community and Technical College
- J F Ingram State Technical College
- James H Faulkner State Community College
- John C Calhoun State Community College
- Lawson State Community College - Birmingham
- Lurleen B Wallace Community College
- Northeast Alabama Community College
- Northwest-Shoals Community College - Muscle Shoals
- Reid State Technical College
- Shelton State Community College
- Southern Union State Community College
- Wallace State Community College - Hanceville

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.
Woodworking Machine Setters, Operators, and Tenders, Except Sawing

Set up, operate, or tend woodworking machines, such as drill presses, lathes, shapers, routers, sanders, planers, and wood nailing machines. May operate CNC equipment.

Education: These occupations typically require a high school diploma.

OJT: Employees in these occupations usually need up to and including 1 month of work-related experience, on-the-job training and/or vocational training.

Tasks:
- Clean or maintain products, machines, or work areas. Feed stock through feed mechanisms or conveyors into planing, shaping, boring, mortising, or sanding machines to produce desired components. Inspect pulleys, drive belts, guards, or fences on machines to ensure that machines will operate safely. Operate gluing machines to glue pieces of wood together, or to press and affix wood veneer to wood surfaces. Examine raw woodstock for defects and to ensure conformity to size and other specification standards. Attach and adjust guides, stops, clamps, chucks, or feed mechanisms, using hand tools. Inspect and mark completed workpieces and stack them on pallets, in boxes, or on conveyors so that they can be moved to the next workstation. Push or hold workpieces against, under, or through cutting, boring, or shaping mechanisms. Examine finished workpieces for smoothness, shape, angle, depth-of-cut, or conformity to specifications and verify dimensions, visually and using hands, rules, calipers, templates, or gauges. Select knives, saws, blades, cutter heads, cams, bits, or belts, according to workpiece, machine functions, or product specifications. Monitor operation of machines and make adjustments to correct problems and ensure conformance to specifications. Set up, program, operate, or tend computerized or manual woodworking machines, such as drill presses, lathes, shapers, routers, sanders, planers, or wood-nailing machines. Determine product specifications and materials, work methods, and machine setup requirements, according to blueprints, oral or written instructions, drawings, or work orders. Change alignment and adjustment of sanding, cutting, or boring machine guides to prevent defects in finished products, using hand tools. Trim wood parts according to specifications, using planes, chisels, or wood files or sanders. Secure woodstock against a guide or in a holding device, place woodstock on a conveyor, or dump woodstock in a hopper to feed woodstock into machines. Start machines, adjust controls, and make trial cuts to ensure that machinery is operating properly. Remove and replace worn parts, bits, belts, sandpaper, or shaping tools. Start machines and move levers to engage hydraulic lifts that press woodstocks into desired forms and disengage lifts after appropriate drying times. Unclamp workpieces and remove them from machines. Set up, program, or control computer-aided design (CAD) or computer numerical control (CNC) machines. Install and adjust blades, cutterheads, boring-bits, or sanding-belts, using hand tools and rules. Adjust machine tables or cutting devices and set controls on machines to produce specified cuts or operations. Control hoists to remove parts or products from work stations. Grease or oil woodworking machines. Sharpen knives, bits, or other cutting or shaping tools.

License: License Not Required.

Outlook: Satisfactory

Alabama Employment Outlook

<table>
<thead>
<tr>
<th>Alabama Wage Data</th>
<th>Alabama Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2016 Estimated Employment: 2,150</td>
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<tr>
<td>Hourly Wage</td>
<td>Annual Wage</td>
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<tr>
<td>Entry</td>
<td>Entry</td>
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<tr>
<td>$10.17</td>
<td>$21,150</td>
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<td>$32,100</td>
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For an explanation on omitted data, see the Missing Data section in the introduction.

Related Occupations
- Boring Machine Operator
- Cabinet Maker
- Computer Numerical Control Operator (CNC Operator)
- Knot Saw Operator
- Lathe Operator
- Machine Operator
- Molder Operator
- Router Operator
- Sander
- Sander Operator

Post-Secondary Institutions with Programs
- George C Wallace Community College - Dothan
- J F Ingram State Technical College
- James H Faulkner State Community College
- Northwest-Shoals Community College - Muscle Shoals
- Southern Union State Community College

2018 Career Exploration Guide

See the Missing Data section in the introduction for information regarding omitted Post-Secondary Institutions and Related Occupations Data.