Occupations Requiring Short-term On-the-job Training (less than 1 month):
- Agricultural Products Graders and Sorters
- Animal Caretakers
- Cannery and Frozen Food Workers
- Commercial Fishers
- Farm and Ranch Workers
- Food Processing Workers
- Forest Conservation Workers
- Forestry Technicians
- Landscapers and Groundskeepers
- Loggers
- Meter Readers
- Nursery Workers
- Seasonal Farm Laborers
- Veterinary Assistants
- Wildfire Fighters

Occupations Requiring Moderate-term On-the-job Training (1 to 12 months):
- Animal Control Workers
- Animal Trainers
- Bakers
- Explosives Workers
- Floral Designers
- Forestry Technicians
- Hazardous Material Workers
- Hoist and Winch Operators
- Landscapers and Groundskeepers
- Log Graders and Scaleers
- Loggers
- Material Moving Machine Operators
- Meat Cutters
- Mining Machine Operators
- Pest Control Workers
- Pump Operators
- Rock Splitters
- Sales Representatives
- Septic Tank Servicers and Sewer Pipe Cleaners

Occupations Requiring Long-term On-the-job Training (over 1 year):
- Animal Trainers
- Bakers
- Farm Equipment Mechanics
- Farmers and Ranchers
- Gas and Oil Drillers
- Heavy Equipment Mechanics
- Hoist and Winch Operators
- Law Enforcement Officers
- Machinists
- Meat Cutters
- Operating Engineers
- Power Plant Operators
- Pump Operators
- Roof Bolters
- Small Engine Mechanics
- Water Treatment Plant Operators

Occupations Requiring Work Experience in a Related Occupation:
- Agricultural Inspectors
- Agricultural Products Graders and Sorters
- Agricultural Worker Supervisors
- Animal Control Workers
- Explosives Workers
- Farmers and Ranchers
- Fish and Wildlife Technicians
- Sales Representatives
- Small Business Operators

Occupations Requiring Postsecondary Certificate:
- Bakers
- Commercial Fishers
- Floral Designers
- Hazardous Material Workers
- Machinists
- Nursery Workers
- Sales Representatives
- Science Technicians
- Septic Tank Servicers and Sewer Pipe Cleaners
- Small Business Operators
Small Engine Mechanics  
Veterinary Technologists and Technicians  
Water Treatment Plant Operators

**Occupations Requiring Associate Degree:**
- Animal Breeders  
- Animal Trainers  
- Engineering Technicians  
- Farm Equipment Mechanics  
- Fish and Wildlife Technicians  
- Forestry Technicians  
- Hazardous Material Workers  
- Heavy Equipment Mechanics  
- Law Enforcement Officers  
- Machinists  
- Science Technicians  
- Small Business Operators  
- Small Engine Mechanics  
- Veterinary Technologists and Technicians

**Occupations Requiring Bachelor’s Degree:**
- Agricultural Engineers  
- Agricultural Inspectors  
- Agricultural Scientists  
- Animal Breeders  
- Animal Scientists  
- Animal Trainers  
- Archivists  
- Cartographers and Photogrammetrists  
- Chemists  
- Compliance Officers and Inspectors  
- Conservation Scientists  
- Dietitians  
- Engineering Technicians  
- Environmental Engineers  
- Environmental Scientists  
- Farm and Home Management Advisors  
- Food Scientists  
- Foresters  
- Geographers  
- Geologists and Geophysicists  
- Hydrologists  
- Industrial Production Managers  
- Law Enforcement Officers  
- Marine Biologists  
- Mechanical Engineers  
- Microbiologists  
- Mining Engineers  
- Museum Technicians and Conservators

**Occupations Requiring Doctoral Degree:**
- Agricultural Scientists  
- Animal Scientists  
- Anthropologists  
- Archeologists  
- Biologists  
- Chemists  
- Environmental Scientists  
- Food Scientists  
- Geographers  
- Geologists and Geophysicists  
- Historians  
- Marine Biologists  
- Medical Scientists

**Occupations Requiring Work Experience Plus a Bachelor’s or Higher Degree:**
- Business Executives  
- Compliance Officers and Inspectors  
- Farmers and Ranchers  
- Marketing Managers  
- Natural Sciences Managers  
- Storage and Transportation Managers

**Occupations Requiring Master’s Degree:**
- Agricultural Scientists  
- Animal Scientists  
- Anthropologists  
- Archivists  
- Biologists  
- Chemists  
- Conservation Scientists  
- Curators  
- Environmental Engineers  
- Environmental Scientists  
- Farm and Home Management Advisors  
- Food Scientists  
- Geographers  
- Geologists and Geophysicists  
- Marine Biologists  
- Microbiologists  
- Museum Technicians and Conservators  
- Oceanographers
Agriculture, Food, and Natural Resource Systems (continued)

Microbiologists
Natural Sciences Managers
Zoologists

Occupations Requiring Professional Degree:
Medical Scientists
Natural Sciences Managers
Veterinarians
CIS Occupations
by Career Learning Area and Level of Education

Arts, Information, and Communications

Occupations by Career Learning Area and Level of Education

Occupations Requiring Short-term On-the-job Training (less than 1 month):
- Craft Artists
- Movie and Stage Grips
- Movie Projectionists

Occupations Requiring Moderate-term On-the-job Training (1 to 12 months):
- Announcers
- Camera Operators
- Floral Designers
- Models
- Painters
- Prepress Workers
- Printing Press Operators

Occupations Requiring Long-term On-the-job Training (over 1 year):
- Actors
- Announcers
- Camera Operators
- Cartoonists
- Dancers
- Desktop Publishers
- Film and Video Editors
- Glass Blowers
- Jewelers
- Music Composers, Directors, and Arrangers
- Musical Instrument Repairers and Tuners
- Musicians
- Painters
- Potters
- Prepress Workers
- Printing Press Operators
- Singers

Occupations Requiring Work Experience in a Related Occupation:
- Choreographers
- Music Composers, Directors, and Arrangers
- Musicians
- Producers and Directors
- Professional Makeup Artists

Occupations Requiring Postsecondary Certificate:
- Animators and Multi-media Artists
- Appraisers and Assessors
- Broadcast Technicians
- Camera Operators
- Computer Support Specialists
- Dancers
- Desktop Publishers
- Floral Designers
- Glass Blowers
- Jewelers
- Musical Instrument Repairers and Tuners
- Photographers
- Potters
- Printing Press Operators
- Professional Makeup Artists
- Proofreaders
- Sound Engineers
- Tattoo Artists

Occupations Requiring Associate Degree:
- Animators and Multi-media Artists
- Cartoonists
- Computer Security Specialists
- Computer Support Specialists
- Desktop Publishers
- Fashion Designers
- Film and Video Editors
- Potters
- Proofreaders
- Sketch Artists

Occupations Requiring Bachelor’s Degree:
- Animators and Multi-media Artists
- Announcers
- Appraisers and Assessors
- Audio-Visual Specialists
- Camera Operators
- Computer Engineers
- Computer Programmers
Computer Security Specialists
Computer Support Specialists
Computer Systems Analysts
Data Communications Analysts
Database Administrators
Editors
Fashion Designers
Film and Video Editors
Geographic Information Systems Specialists
Graphic Designers
Industrial Designers
Interior Designers
Interpreters and Translators
News Reporters
Photographers
Potters
Set and Exhibit Designers
Sketch Artists
Technical Writers
Writers

**Occupations Requiring Work Experience**
**Plus a Bachelor’s or Higher Degree:**

Art Directors
Computer and Information Systems Managers
Costume and Wardrobe Specialists
Editors
Fine Artists
Graphic Designers
Marketing Managers
Musicians
Producers and Directors

**Occupations Requiring Master’s Degree:**

Audio-Visual Specialists
Choreographers
Curators
Operations Research Analysts
Occupations by Career Learning Area and Level of Education

Business and Management

CIS Occupations

Occupations Requiring Short-term On-the-job Training (less than 1 month):
- Announcers
- Baggage Porters and Bellhops
- Bank Tellers
- Bartenders
- Bill and Account Collectors
- Billing Clerks
- Bus Drivers
- Buspersons
- Cashiers
- Copy Machine Operators
- Counter and Rental Clerks
- Counter Attendants
- Couriers and Messengers
- Credit Checkers and Authorizers
- Customer Service Representatives
- Demonstrators and Promoters
- Fast Food Cooks
- File Clerks
- Food Preparation Workers
- Freight Handlers
- General Office Clerks
- Grocery Baggers
- Hotel Desk Clerks
- Human Resources Assistants
- Interviewing Clerks
- Janitors
- Kitchen Helpers
- Library Assistants and Bookmobile Drivers
- Library Technical Assistants
- License Clerks
- Loan Clerks
- Mail Carriers
- Mail Clerks
- Medical Assistants
- Meter Readers
- Newspaper Carriers
- Order Clerks
- Packers and Packagers
- Parking Lot Attendants
- Payroll and Timekeeping Clerks
- Postal Clerks
- Production and Planning Clerks
- Receptionists
- Recreation Attendants
- Recreation Workers
- Reservation and Ticket Agents
- Restaurant Hosts
- Retail Salespeople
- Room Cleaners
- Route Salespeople
- Service Station Attendants
- Shipping and Receiving Clerks
- Short-Order Cooks
- Stock Clerks
- Taxi Drivers and Chauffeurs
- Telemarketers
- Telephone Operators
- Ushers and Ticket Takers
- Waiters and Waitresses

Occupations Requiring Moderate-term On-the-job Training (1 to 12 months):
- Advertising Salespeople
- Animal Caretakers
- Animal Trainers
- Automobile Salespeople
- Bakers
- Bookkeeping and Accounting Clerks
- Brokerage Clerks
- Bus Drivers
- Casino Gaming Workers
- Computer Operators
- Customer Service Representatives
- Data Entry Keyers
- Desktop Publishers
- Dispatchers
- Executive Secretaries
- Fast Food Service Managers
- Freight Handlers
- Graphic Designers
- Insurance Policy and Claims Clerks
- Laundry and Dry Cleaning Workers
- Mail Carriers
- Mail Clerks
- Merchandise Displayers
- Models
Business and Management (continued)

Parts Salespeople
Recreation Guides
Sales Representatives
Secretaries
Statistical Clerks
Tax Preparers
Telephone Operators
Title Examiners and Searchers
Tour Guides
Word Processors

Occupations Requiring Long-term On-the-job Training (over 1 year):
Building Maintenance Workers
Chefs and Dinner Cooks
Farmers and Ranchers
Freight Handlers
Insurance Adjusters and Examiners

Occupations Requiring Work Experience in a Related Occupation:
Buyers and Purchasing Agents
Coaches and Scouts
Cost Estimators
Food Service Worker Supervisors
Hotel and Motel Managers
Janitor and Housekeeper Supervisors
New Accounts Clerks
Office Managers
Postmasters and Mail Superintendents
Professional Athletes
Recreation Guides
Restaurant Managers
Sales Representatives
Sales Worker Supervisors
Small Business Operators
Umpires and Referees

Occupations Requiring Postsecondary Certificate:
Appraisers and Assessors
Bookkeeping and Accounting Clerks
Casino Gaming Workers
Chefs and Dinner Cooks
Computer Equipment Repairers
Computer Security Specialists
Computer Support Specialists
Court Reporters
Executive Secretaries
Fast Food Service Managers

Occupations Requiring Bachelor's Degree:
Accountants and Auditors
Actors
Actuaries
Agents and Business Managers
Animal Trainers

Funeral Directors
Hotel and Motel Managers
Human Resources Assistants
Legal Secretaries
Paralegals
Parts Salespeople
Proofreaders
Real Estate Agents
Reservation and Ticket Agents
Route Salespeople
Sales Representatives
Secretaries
Small Business Operators
Statistical Clerks
Travel Agents

Occupations Requiring Associate Degree:
Bookkeeping and Accounting Clerks
Chefs and Dinner Cooks
Computer Equipment Repairers
Computer Security Specialists
Computer Support Specialists
Cost Estimators
Court Reporters
Data Communications Analysts
Desktop Publishers
Executive Secretaries
Fast Food Service Managers
Funeral Directors
Hotel and Motel Managers
Human Resources Assistants
Library Technical Assistants
Loan Clerks
Mathematical Technicians
Mathematical Technicians
Merchandise Displayers
Office Managers
Paralegals
Proofreaders
Restaurant Managers
Small Business Operators
Transportation Agents

C A R E E R  L E A R N I N G  A R E A S
O C C U P A T I O N S  B Y  L E V E L  O F  E D U C A T I O N
Business and Management (continued)

Appraisers and Assessors  
Arbitrators and Mediators  
Archivists  
Budget Analysts  
Buyers and Purchasing Agents  
Computer Programmers  
Computer Security Specialists  
Computer Support Specialists  
Computer Systems Administrators  
Computer Systems Analysts  
Construction Managers  
Cost Estimators  
Court Reporters  
Credit Analysts  
Data Communications Analysts  
Database Administrators  
Desktop Publishers  
Economists  
Employee Training Specialists  
Employment Interviewers  
Employment Recruiters  
Fashion Designers  
Financial Analysts  
Financial Counselors  
Food Service Worker Supervisors  
Geographers  
Graphic Designers  
Hotel and Motel Managers  
Industrial Production Managers  
Insurance Agents  
Insurance Underwriters  
Loan Clerks  
Loan Officers  
Market Research Analysts  
Meeting and Convention Planners  
Merchandise Displayers  
Museum Technicians and Conservators  
New Accounts Clerks  
Office Managers  
Paralegals  
Postmasters and Mail Superintendents  
Property and Real Estate Managers  
Public Relations Managers  
Public Relations Specialists  
Recreation Workers  
Restaurant Managers  
Sales Representatives  
Securities Salespeople  
Set and Exhibit Designers  
Small Business Operators  
Tax Examiners

Occupations Requiring Work Experience  
Plus a Bachelor’s or Higher Degree:

Actuaries  
Administrative Services Managers  
Advertising Managers  
Advertising Salespeople  
Agents and Business Managers  
Art Directors  
Business Executives  
Coaches and Scouts  
College and University Administrators  
Compliance Officers and Inspectors  
Computer and Information Systems Managers  
Computer Systems Administrators  
Construction Managers  
Data Communications Analysts  
Education Administrators  
Engineering Managers  
Farmers and Ranchers  
Financial Managers  
General and Operations Managers  
Health Services Administrators  
Human Resources Managers  
Interpreters and Translators  
Job Benefits and Analysis Specialists  
Management Analysts  
Marketing Managers  
Natural Sciences Managers  
Postmasters and Mail Superintendents  
Purchasing Managers  
Sales Managers  
Social and Community Service Managers  
Storage and Transportation Managers

Occupations Requiring Master’s Degree:

Actuaries  
Archivists  
Budget Analysts  
Buyers and Purchasing Agents  
Curators  
Economists  
Education Administrators  
Employment Recruiters  
Financial Counselors  
Financial Managers  
General and Operations Managers  
Human Resources Managers  
Job Benefits and Analysis Specialists  
Librarians  
Management Analysts
Business and Management (continued)

Market Research Analysts
Mathematicians
Museum Technicians and Conservators
Natural Sciences Managers
Operations Research Analysts
Psychologists
Public Relations Managers
Sociologists
Statisticians

Occupations Requiring Doctoral Degree:
Curators
Economists
Education Administrators
Market Research Analysts
Mathematicians
Natural Sciences Managers
Psychologists

Occupations Requiring Professional Degree:
Agents and Business Managers
Natural Sciences Managers
Occupations Requiring Short-term On-the-job Training (less than 1 month):

- Billing Clerks
- Home Health Aides
- Library Assistants and Bookmobile Drivers
- Library Technical Assistants
- Medical Equipment Preparers
- Nursing Assistants
- Personal and Home Care Aides
- Pharmacy Aides
- Phlebotomists
- Psychiatric Aides
- Veterinary Assistants

Occupations Requiring Moderate-term On-the-job Training (1 to 12 months):

- Ambulance Drivers
- Cardiovascular Technologists
- Dental Assistants
- Dietetic Technicians
- Electroneurodiagnostic Technologists
- Lens Grinders and Polishers
- Massage Therapists
- Medical Assistants
- Medical Equipment Preparers
- Medical Equipment Repairers
- Opticians
- Pharmacy Aides
- Pharmacy Technicians
- Phlebotomists
- Physical Therapist Aides
- Secretaries

Occupations Requiring Long-term On-the-job Training (over 1 year):

- Dental Laboratory Technicians
- Fitness and Aerobics Instructors
- Medical Appliance Technicians
- Opticians
- Orthotic and Prosthetic Specialists
- Stationary Engineers

Occupations Requiring Postsecondary Certificate:

- Dental Assistants
- Denturists
- Electroneurodiagnostic Technologists
- Emergency Medical Technicians
- Home Health Aides
- Licensed Practical Nurses
- Massage Therapists
- Medical Assistants
- Medical Secretaries
- Nuclear Medicine Technologists
- Nursing Assistants
- Opticians
- Personal and Home Care Aides
- Pharmacy Technicians
- Psychiatric Aides
- Psychiatric Technicians
- Radiologic Technologists
- Science Technicians
- Secretaries
- Surgical Technologists
- Veterinary Technologists and Technicians

Occupations Requiring Associate Degree:

- Cardiovascular Technologists
- Dental Assistants
- Dental Hygienists
- Dental Laboratory Technicians
- Denturists
- Dietetic Technicians
- Electroneurodiagnostic Technologists
- Health Information Technicians
- Library Technical Assistants
- Library Technical Assistants
- Mathematical Technicians
- Medical Assistants
- Medical Laboratory Technicians
- Medical Sonographers
- Nuclear Medicine Technologists
- Occupational Therapist Assistants
- Pharmacy Technicians
- Physical Therapist Assistants
Psychiatric Technicians
Radiation Therapists
Radiologic Technologists
Registered Nurses
Respiratory Therapists
Science Technicians
Surgical Technologists
Veterinary Technologists and Technicians

Occupations Requiring Bachelor's Degree:
- Athletic Trainers
- Chemists
- Dental Hygienists
- Dietitians
- Fitness and Aerobics Instructors
- Medical Laboratory Technologists
- Microbiologists
- Nuclear Medicine Technologists
- Nurse Anesthetists
- Nurse Practitioners
- Occupational Health and Safety Specialists
- Occupational Therapists
- Orthotic and Prosthetic Specialists
- Physician Assistants
- Radiation Therapists
- Radiologic Technologists
- Recreational Therapists
- Registered Nurses
- Sanitarians
- Social Workers

Health Services (continued)

Occupations Requiring Work Experience Plus a Bachelor’s or Higher Degree:
- Health Services Administrators
- Management Analysts

Occupations Requiring Master’s Degree:
- Acupuncturists
- Biologists
- Chemists
- Librarians
- Management Analysts
- Microbiologists
- Nurse Anesthetists
- Nurse Practitioners
- Physical Therapists
- Psychologists
- Public Health Educators
- School Counselors

Social Workers
Speech Pathologists and Audiologists
Statisticians

Occupations Requiring Doctoral Degree:
- Chemists
- Medical Scientists
- Microbiologists
- Psychologists

Occupations Requiring Professional Degree:
- Anesthesiologists
- Chiropractors
- Dentists
- Family and General Practitioners
- Internists
- Medical Examiners
- Medical Scientists
- Naturopathic Physicians
- Obstetricians and Gynecologists
- Optometrists
- Pediatricians
- Pharmacists
- Podiatrists
- Psychiatrists
- Surgeons
- Veterinarians

C A R E E R  L E A R N I N G  A R E A S
O C C U P A T I O N S  B Y  L E V E L  O F  E D U C A T I O N
Occupations Requiring Short-term On-the-job Training (less than 1 month):
- Child Care Workers
- Clothes Pressers
- Court Clerks
- Crossing Guards
- Customer Service Representatives
- Domestic Service Workers
- Fire Fighters
- Funeral Attendants
- Library Assistants and Bookmobile Drivers
- Library Technical Assistants
- Military Enlisted Personnel
- Parking Enforcement Officers
- Personal and Home Care Aides
- Recreation Attendants
- Security Guards
- Teacher Aides
- Ushers and Ticket Takers
- Wildfire Fighters

Occupations Requiring Moderate-term On-the-job Training (1 to 12 months):
- Ambulance Drivers
- Animal Control Workers
- Bailiffs
- Clothes Pressers
- Corrections Officers
- Customer Service Representatives
- Dispatchers
- Hazardous Material Workers
- Laundry and Dry Cleaning Workers
- Life Guards and Ski Patrollers
- Massage Therapists
- Secretaries
- Social and Human Service Assistants
- Statistical Clerks
- Tax Preparers
- Title Examiners and Searchers

Occupations Requiring Long-term On-the-job Training (over 1 year):
- Coaches and Scouts
- Corrections Officers
- Embalmers
- Fire Fighters
- Fire Inspectors
- Fire Investigators
- Fitness and Aerobics Instructors
- Funeral Directors
- Law Enforcement Officers
- Tailors

Occupations Requiring Work Experience in a Related Occupation:
- Animal Control Workers
- Bailiffs
- Construction and Building Inspectors
- Detectives and Investigators
- Employee Training Specialists
- Fire Inspectors
- Government Benefits Interviewers
- Postmasters and Mail Superintendents
- Private Detectives and Investigators
- Professional Makeup Artists
- Professional Technical Education Teachers
- Small Business Operators

Occupations Requiring Postsecondary Certificate:
- Addictions Counselors
- Appraisers and Assessors
- Barbers
- Child Care Workers
- Coaches and Scouts
- Computer Security Specialists
- Court Reporters
- Embalmers
- Emergency Medical Technicians
- Fire Fighters
- Funeral Directors
- Hairstylists and Cosmetologists
Hazardous Material Workers  
Law Enforcement Officers  
Legal Secretaries  
Life Guards and Ski Patrollers  
Manicurists  
Massage Therapists  
Paralegals  
Personal and Home Care Aides  
Professional Makeup Artists  
Secretaries  
Small Business Operators  
Statistical Clerks  
Tattoo Artists  

**Occupations Requiring Associate Degree:**  
Addictions Counselors  
Court Clerks  
Court Reporters  
Embalmers  
Fire Inspectors  
Fire Investigators  
Funeral Directors  
Government Benefits Interviewers  
Law Enforcement Officers  
Library Assistants and Bookmobile Drivers  
Library Technical Assistants  
Massage Therapists  
Paralegals  
Recreation Guides  
Recreation Workers  
Residential Counselors  
Sketch Artists  
Small Business Operators  
Social and Human Service Assistants  
Teacher Aides  

**Occupations Requiring Bachelor’s Degree:**  
Accountants and Auditors  
Addictions Counselors  
Appraisers and Assessors  
Audio-Visual Specialists  
Budget Analysts  
Compliance Officers and Inspectors  
Computer Security Specialists  
Court Clerks  
Court Reporters  
Detectives and Investigators  
Dietitians  
Economists  
Elementary School Teachers  
Employee Training Specialists  
Farm and Home Management Advisors  
Financial Analysts  
Financial Counselors  
Financial Examiners  
Fitness and Aerobics Instructors  
Forensic Science Technicians  
Geographers  
Geographic Information Systems Specialists  
Government Benefits Interviewers  
High School Teachers  
Instructional Coordinators  
Interpreters and Translators  
Law Clerks  
Law Enforcement Officers  
Market Research Analysts  
Middle School Teachers  
Military Officers  
Occupational Health and Safety Specialists  
Paralegals  
Park Rangers  
Preschool and Kindergarten Teachers  
Probation Officers  
Professional Technical Education Teachers  
Property and Real Estate Managers  
Public Relations Specialists  
Recreation Workers  
Rehabilitation Counselors  
Residential Counselors  
Sanitarians  
Securities Salespeople  
Sketch Artists  
Small Business Operators  
Social Science Research Assistants  
Social Workers  
Special Education Teachers  
Tax Examiners  

**Occupations Requiring Work Experience Plus a Bachelor’s or Higher Degree:**  
Administrative Services Managers  
Advertising Managers  
Arbitrators and Mediators  
Business Executives  
Coaches and Scouts
Human Resources (continued)

Occupations Requiring Doctoral Degree:
- College and University Teachers
- Economists
- Education Administrators
- Geographers
- Market Research Analysts
- Mathematicians
- Mental Health Counselors
- Political Scientists
- Psychologists
- Sociologists

Occupations Requiring Professional Degree:
- Arbitrators and Mediators
- Clergy
- Judges and Hearing Officers
- Law Clerks
- Lawyers
- Medical Examiners

Occupations Requiring Master's Degree:
- Arbitrators and Mediators
- Archivists
- Audio-Visual Specialists
- Clergy
- Curators
- Economists
- Education Administrators
- Elementary School Teachers
- Farm and Home Management Advisors
- Financial Counselors
- Geographers
- High School Teachers
- Human Resources Managers
- Instructional Coordinators
- Librarians
- Management Analysts
- Market Research Analysts
- Mathematicians
- Mental Health Counselors
- Middle School Teachers
- Political Scientists
- Preschool and Kindergarten Teachers
- Psychologists
- Public Health Educators
- Recreation Workers
- Rehabilitation Counselors
- School Counselors
- Social Workers
- Special Education Teachers
- Statisticians
- Urban and Regional Planners

College and University Administrators
Compliance Officers and Inspectors
Detectives and Investigators
Education Administrators
Employee Training Specialists
Financial Managers
Fire Inspectors
Fire Investigators
Human Resources Managers
Instructional Coordinators
Judges and Hearing Officers
Management Analysts
Military Officers
Police and Detective Supervisors
Professional Technical Education Teachers
Social and Community Service Managers
Transportation Inspectors

Human Resources (continued)
Occupations Requiring Short-term On-the-job Training (less than 1 month):

- Billing Clerks
- Construction Helpers
- Counter and Rental Clerks
- Couriers and Messengers
- Customer Service Representatives
- Electrician Helpers
- Forklift Operators
- Foundry Workers
- General Construction Workers
- Highway Maintenance Workers
- Janitors
- Landscapers and Groundskeepers
- Library Assistants and Bookmobile Drivers
- Light Truck Drivers
- Lumber Production Workers
- Material Moving Machine Operators
- Mechanic and Repairer Helpers
- Mobile and Factory Home Installers
- Packaging and Filling Machine Operators
- Packers and Packagers
- Photograph Processing Workers
- Postal Clerks
- Production and Planning Clerks
- Production Helpers
- Pulp and Paper Workers
- Reservation and Ticket Agents
- Riggers
- Roustabouts
- Route Salespeople
- School Bus Drivers
- Semiconductor Technicians
- Service Station Attendants
- Shipping and Receiving Clerks
- Stock Clerks
- Surveying and Mapping Technicians
- Taxi Drivers and Chauffeurs
- Tire Repairers and Changers
- Traffic Technicians
- Trash Collectors
- Vehicle Cleaners
- Veneer and Plywood Workers

Occupations Requiring Moderate-term On-the-job Training (1 to 12 months):

- Airline Ground Crew Workers
- Ambulance Drivers
- Bicycle Repairers
- Bookbinders and Bindery Workers
- Bus Drivers
- Camera and Photographic Equipment Repairers
- Chemical Equipment Operators
- Coin and Vending Machine Repairers
- Commercial Divers
- Crane and Tower Operators
- Customer Service Representatives
- Deckhands
- Dispatchers
- Drywall Finishers
- Drywall Installers
- Explosives Workers
- Floor and Carpet Layers
- Foundry Workers
- Freight Handlers
- Gas and Oil Drillers
- General Construction Workers
- Heavy Truck Drivers
- Hoist and Winch Operators
- Insulation Installers
- Landscapers and Groundskeepers
- Lens Grinders and Polishers
- Locksmiths
- Material Moving Machine Operators
- Medical Equipment Repairers
- Metal and Plastic Processing Workers
- Numerical Control Machine Operators
- Operating Engineers
- Painters
- Painting and Coating Machine Operators
- Parts Salespeople
- Paving Equipment Operators
- Photograph Equipment Operators
- Pipe Layers
- Pump Operators
- Rock Splitters
- Roofers
- Roustabouts
Sawing Machine Operators
Semiconductor Processing Operators
Septic Tank Servicers and Sewer Pipe Cleaners
Sewing Machine Operators
Sheet Metal Workers
Shipfitters
Small Engine Mechanics
Subway and Streetcar Operators
Tank Car, Truck, and Ship Loaders
Textile Machine Operators
Tire Building Machine Operators
Tool Grinders, Filers, and Sharpeners
Vehicle Painters
Wallpaper Hangers
Welding and Soldering Machine Operators
Woodworking Machine Operators

Glass Blowers
Glaziers
Heating and Cooling System Mechanics
Heavy Equipment Mechanics
Hoist and Winch Operators
Industrial Machinery Mechanics
Insulation Installers
Jewelers
Line Installers and Repairers
Machinists
Medical Appliance Technicians
Medical Equipment Repairers
Metal and Plastic Processing Workers
Millwrights
Mobile and Factory Home Installers
Motorboat Mechanics
Motorcycle Mechanics
Musical Instrument Repairers and Tuners
Numerical Control Machine Operators
Numerical Control Tool Programmers
Office Machine Repairers
Operating Engineers
Painters
Paving Equipment Operators
Plasterers
Plumbers and Pipefitters
Potters
Power Plant Operators
Pump Operators
Riggers
Roof Bolters
Sales Representatives
Sheet Metal Workers
Shipfitters
Shoe and Leather Workers
Small Engine Mechanics
Stationary Engineers
Structural Metal Workers
Tailors
Tank Car, Truck, and Ship Loaders
Textile Machine Operators
Tile Setters
Tool and Die Makers
Tool Grinders, Filers, and Sharpeners
Upholsterers
Vehicle Painters
Wallpaper Hangers
Watch Repairers
Welders and Solderers

Occupations Requiring Long-term On-the-job Training (over 1 year):

Air Traffic Controllers
Airplane Assemblers
Appliance Installers and Repairers
Auto Body Repairers
Auto Glass Installers
Automatic Teller Machine Servicers
Boilermakers
Bookbinders and Bindery Workers
Bricklayers and Stonemasons
Building Maintenance Workers
Bus and Truck Mechanics
Cabinetmakers
Carpenters
Cement Masons
Chemical Plant Operators
Coin and Vending Machine Repairers
Commercial Divers
Communications Equipment Mechanics
Construction and Well Drillers
Crane and Tower Operators
Electric Motor Repairers
Electricians
Elevator Installers and Repairers
Farm Equipment Mechanics
Fence Builders
Flight Attendants
Floor Sanding Machine Operators
Freight Handlers
Furniture Finishers
Gas and Oil Drillers
Gas and Oil Plant Operators
General Construction Workers

C A R E E R  L E A R N I N G  A R E A S
O C C U P A T I O N S  B Y  L E V E L  O F  E D U C A T I O N
Industrial and Engineering Systems (continued)

**Occupations Requiring Work Experience in a Related Occupation:**
- Airplane Assemblers
- Communications Equipment Mechanics
- Construction and Building Inspectors
- Cost Estimators
- Explosives Workers
- Janitor and Housekeeper Supervisors
- Locomotive Engineers
- Numerical Control Tool Programmers
- Postmasters and Mail Superintendents
- Precision Assemblers
- Quality Control Inspectors
- Railroad Brake, Signal, and Switch Operators
- Sales Representatives
- Ship Captains and Mates
- Ship Engineers
- Ship Pilots
- Train Conductors and Yardmasters

**Occupations Requiring Postsecondary Certificate:**
- Aircraft Mechanics
- Airplane Assemblers
- Airplane Pilots
- Appliance Installers and Repairers
- Auto Body Repairers
- Automatic Teller Machine Servicers
- Automobile Mechanics
- Broadcast Technicians
- Bus and Truck Mechanics
- Coin and Vending Machine Repairers
- Communications Equipment Mechanics
- Computer Equipment Repairers
- Computer Security Specialists
- Computer Support Specialists
- Drafters
- Electric Motor Repairers
- Farm Equipment Mechanics
- Gas and Oil Plant Operators
- Glass Blowers
- Heating and Cooling System Mechanics
- Heavy Equipment Mechanics
- Heavy Truck Drivers
- Home Electronics Repairers
- Industrial Electronics Repairers
- Industrial Machinery Mechanics
- Jewelers
- Laser Technicians
- Machinists
- Medical Equipment Repairers
- Metalworking Patternmakers
- Molders
- Motorboat Mechanics
- Motorcycle Mechanics
- Musical Instrument Repairers and Tuners
- Numerical Control Tool Programmers
- Office Machine Repairers
- Painting and Coating Machine Operators
- Parts Salespeople
- Potters
- Precision Assemblers
- Roustabouts
- Route Salespeople
- Sales Representatives
- Science Technicians
- Semiconductor Processing Operators
- Semiconductor Technicians
- Septic Tank Servicers and Sewer Pipe Cleaners
- Ship Engineers
- Shipfitters
- Small Engine Mechanics
- Sound Engineers
- Surveying and Mapping Technicians
- Tool and Die Makers
- Vehicle Painters
- Watch Repairers
- Welders and Solderers

**Occupations Requiring Associate Degree:**
- Aircraft Mechanics
- Automobile Mechanics
- Broadcast Technicians
- Bus and Truck Mechanics
- Communications Equipment Mechanics
- Computer Equipment Repairers
- Computer Security Specialists
- Computer Support Specialists
- Drafters
- Engineering Technicians
- Heavy Equipment Mechanics
- Industrial Electronics Repairers
- Laser Technicians
- Library Assistants and Bookmobile Drivers
- Machinists
- Medical Appliance Technicians
- Medical Equipment Repairers
- Metalworking Patternmakers
- Molders
- Numerical Control Tool Programmers
- Potters
Science Technicians
Semiconductor Processing Operators
Semiconductor Technicians
Shipfitters
Surveying and Mapping Technicians
Traffic Technicians
Welders and Solderers

**Occupations Requiring Bachelor’s Degree:**

Aerospace Engineers
Agricultural Engineers
Airplane Pilots
Architects
Buyers and Purchasing Agents
Cartographers and Photogrammetrists
Chemical Engineers
Chemists
Civil Engineers
Compliance Officers and Inspectors
Computer Engineers
Computer Programmers
Computer Security Specialists
Computer Support Specialists
Computer Systems Administrators
Computer Systems Analysts
Cost Estimators
Data Communications Analysts
Electrical and Electronics Engineers
Engineering Technicians
Environmental Engineers
Environmental Scientists
Industrial Designers
Industrial Engineers
Industrial Production Managers
Interior Designers
Landscape Architects
Materials Engineers
Mechanical Engineers
Meteorologists
Microbiologists
Mining Engineers
Nuclear Engineers
Occupational Health and Safety Specialists
Petroleum Engineers
Potters
Safety Engineers
Sales Representatives
Ship Captains and Mates
Ship Engineers
Ship Pilots

Surveyors

**Occupations Requiring Work Experience Plus a Bachelor’s or Higher Degree:**

Administrative Services Managers
Compliance Officers and Inspectors
Computer and Information Systems Managers
Computer Systems Administrators
Construction Managers
Data Communications Analysts
Engineering Managers
General and Operations Managers
Marketing Managers
Sales Managers
Storage and Transportation Managers
Transportation Inspectors

**Occupations Requiring Master’s Degree:**

Biologists
Chemists
Electrical and Electronics Engineers
Environmental Engineers
Environmental Scientists
General and Operations Managers
Materials Engineers
Microbiologists
Nuclear Engineers
Operations Research Analysts
Urban and Regional Planners

**Occupations Requiring Doctoral Degree:**

Astronomers
Biologists
Chemists
Environmental Scientists
Medical Scientists
Microbiologists
Physicists

**Occupations Requiring Professional Degree**

Medical Scientists