

**Labor Market Estimating Conference**  
**Executive Summary**  
**August 21, 2024**  
**---Revised October 1, 2024---**

The Labor Market Estimating Conference (LMEC) met on August 21, 2024, to discuss and adopt official information pursuant to s. 216.136, F.S. as amended by Chapter 2023-81, Laws of Florida. The cumulative impact of the law changes made during the 2023 Session charge the LMEC with providing long-term strategic direction regarding at-risk areas of Florida's labor market. The objective of the meeting was to focus on these areas of concern. The LMEC used the results from an in-depth analysis of 832 distinct occupations to identify the occupations most at-risk.

**1. Occupational Areas of Concern (by educational requirement)**

Occupations with gaps were identified by comparing occupational supply and demand in the 10th year of the forecast to determine where projected demand exceeds expected supply by more than 5%. This percentage was reduced from the 10% adopted at the Conference held on July 14, 2023, primarily due to the increased value of the underlying data. Relative to last year, additional panels have been added to the data series that reflect partial information from 2023, thereby reducing the number of assumptions that were previously needed to transition to a functional labor market.

Overall, labor supply is more rigid than demand—at the statewide level, between workforce regions, and among occupations. All else being equal, demand can shift quickly, while supply may lag. Essentially, a gap between the two means that: (1) demand exceeds supply currently and will continue to do so in the future, or (2) the growth in future demand will outpace the likely labor supply for that occupation. These findings were produced by model runs that simulated each occupation's employment supply and demand trajectories over the forecast period. The overall methodology:

- Used current occupational shares of the labor supply against the latest forecast adopted by the Florida Economic Estimating Conference for all future years. Relative to the prior conference, the overall labor supply has increased in size across the forecast period.
- Selected a base year of potential demand from the following sources: (1) the maximum of 2022 or 2023 reported occupational employment data from the U.S. Bureau of Labor Statistics (BLS); (2) 2022 IMPLAN data for Florida; or (3) national per capita ratios that were derived from 2023 BLS data for each occupation which were then applied to Florida's population. The governing assumption is that demand must equal or exceed filled jobs. The base year was grown by various rates (predominately population-driven) using the latest forecasts from the Economic and Demographic Estimating Conferences. In some cases, multiple demand sources were used to develop the appropriate starting point and forecast target.

Several significant refinements to the prior methodology were introduced as part of this year's analysis. Most importantly, a detailed examination was conducted of the

employment estimates adopted by the Florida Economic Estimating Conference (FEEC) to incorporate a particular element from that forecast. The FEEC uses the North American Industry Classification System (NAICS) for which BLS publishes staffing patterns by Standard Occupational Classification (SOC) system codes. The purpose of this examination was to isolate occupations in industries that are likely flat or in decline over the forecast period. Thirty-two occupations were identified. These occupations were then held constant to their current employment levels. A separate analysis added eight occupations related to gambling to this grouping, bringing the total to 40 occupations receiving this treatment. Although, some occupations have both limited supply and demand, the analysis found that there is reason to believe that a significant gap in supply will exist for 85 out of 832 discrete occupations (10.2%). The prior analysis had shown 101 occupations. Note that evolving or emerging trends have yet to be addressed. As such, this analysis does not alter the existing economic structure, meaning the results represent foundational imbalances that would be expected to persist into the future, absent intervention.

**CONFERENCE ACTION (revised 10/1/2024):** *The Conference officially adopted 85 discrete occupations as “Statewide Occupational Areas of Concern.” Results were also presented and discussed regarding the 24 Workforce Regions; however, the Conference adopted the methodology to be applied rather than the specific lists. This allowed the lists to be revised to reflect an announcement that an adjusted regional structure had recently been put in place. Results specific to the revised configuration for the workforce regions have now been posted. In general, area-specific calculations cause the individual regional lists to differ from the statewide list. See Conference Products for the adopted lists.*

## **2. Critical Occupational Groups of Concern**

The 85 occupational areas of concern were further organized by occupational group. By group, the demand for those occupations in the 10th year of the forecast was then compared to the total statewide demand for all occupations. By percentage of demand represented by the occupational areas of concern, two groups stand out: (1) Healthcare Practitioners and Technical Occupations with occupational areas of concern that represent 3.4% of statewide demand in that year; and (2) Healthcare Support Occupations with occupational areas of concern that represent 2.2% of statewide demand in that year.

**CONFERENCE ACTION:** *The Live Healthy package of 2024, comprised of CS/SB 7016, SB 7018, and CS/SB 330, made significant changes affecting the labor market for health care. The LMEC has delayed further action on the related occupational groups until implementation has progressed.*

The Conference also had a separate discussion regarding the latest data available for public school teachers. The principals agreed to continue monitoring this data; however, the Conference saw no reason to provide a methodological adjustment at this time.

The next conference will be held during the winter conference season to address evolving and emerging trends.

# Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	35-9099	Food Preparation and Serving Related Workers, All Other
	51-3023	Slaughterers and Meat Packers
	53-7041	Hoist and Winch Operators
High school diploma or equivalent	11-9131	Postmasters and Mail Superintendents
	31-1120	Home Health and Personal Care Aides
	39-7010	Tour and Travel Guides
	41-9012	Models
	43-4021	Correspondence Clerks
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4051	Metal-Refining Furnace Operators and Tenders
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-4192	Layout Workers, Metal and Plastic
	51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-6092	Fabric and Apparel Patternmakers
	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	51-9191	Adhesive Bonding Machine Operators and Tenders
	51-9193	Cooling and Freezing Equipment Operators and Tenders
	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
	53-4011	Locomotive Engineers
	53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
	53-4031	Railroad Conductors and Yardmasters
	53-5011	Sailors and Marine Oilers
Some college, no degree	27-2032	Choreographers
	33-2022	Forest Fire Inspectors and Prevention Specialists
	39-9041	Residential Advisors
Postsecondary nondegree award	19-5012	Occupational Health and Safety Technicians
	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-4111	Tool and Die Makers
	51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
Associate's degree	51-8021	Stationary Engineers and Boiler Operators
	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
Bachelor's degree	49-9081	Wind Turbine Service Technicians
	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2161	Nuclear Engineers
	17-2171	Petroleum Engineers
	19-1012	Food Scientists and Technologists
	19-1099	Life Scientists, All Other
	19-2031	Chemists
	19-2032	Materials Scientists
	19-2099	Physical Scientists, All Other
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-4013	Museum Technicians and Conservators
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants

# Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
Master's degree	15-2041	Statisticians
	19-1011	Animal Scientists
	19-1022	Microbiologists
	19-3011	Economists
	19-3094	Political Scientists
	21-2011	Clergy
	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
Doctoral or professional degree	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1053	Environmental Science Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1215	Family Medicine Physicians

# Areas of Concern by Occupational Group

Occupational Group	SOC Code	SOC Title
<b>Management Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	11-9131	Postmasters and Mail Superintendents
<b>Computer and Mathematical Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	15-2041	Statisticians
<b>Architecture and Engineering Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	17-2041 17-2151 17-2161 17-2171	Chemical Engineers Mining and Geological Engineers, Including Mining Safety Engineers Nuclear Engineers Petroleum Engineers
<b>Life, Physical, and Social Science Occupations</b> <i>These occupations are 0.1% of Total Demand in FY2033-34</i>	19-1011 19-1012 19-1021 19-1022 19-1099 19-2012 19-2031 19-2032 19-2099 19-3011 19-3094 19-4071 19-5012	Animal Scientists Food Scientists and Technologists Biochemists and Biophysicists Microbiologists Life Scientists, All Other Physicists Chemists Materials Scientists Physical Scientists, All Other Economists Political Scientists Forest and Conservation Technicians Occupational Health and Safety Technicians
<b>Community and Social Service Occupations</b> <i>These occupations are 0.1% of Total Demand in FY2033-34</i>	21-2011 21-2021 21-2099	Clergy Directors, Religious Activities and Education Religious Workers, All Other
<b>Educational Instruction and Library Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	25-1041 25-1053 25-1062 25-1067 25-1113 25-1193 25-4011 25-4013	Agricultural Sciences Teachers, Postsecondary Environmental Science Teachers, Postsecondary Area, Ethnic, and Cultural Studies Teachers, Postsecondary Sociology Teachers, Postsecondary Social Work Teachers, Postsecondary Recreation and Fitness Studies Teachers, Postsecondary Archivists Museum Technicians and Conservators
<b>Arts, Design, Entertainment, Sports, and Media Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	27-2032	Choreographers
<b>Healthcare Practitioners and Technical Occupations</b> <i>These occupations are 3.4% of Total Demand in FY2033-34</i>	29-1071 29-1125 29-1141 29-1151 29-1171 29-1215 29-2031 29-2033 29-2035 29-2061 29-2092	Physician Assistants Recreational Therapists Registered Nurses Nurse Anesthetists Nurse Practitioners Family Medicine Physicians Cardiovascular Technologists and Technicians Nuclear Medicine Technologists Magnetic Resonance Imaging Technologists Licensed Practical and Licensed Vocational Nurses Hearing Aid Specialists
<b>Healthcare Support Occupations</b> <i>These occupations are 2.2% of Total Demand in FY2033-34</i>	31-1120 31-1131 31-2022	Home Health and Personal Care Aides Nursing Assistants Physical Therapist Aides
<b>Protective Service Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	33-2022	Forest Fire Inspectors and Prevention Specialists
<b>Food Preparation and Serving Related Occupations</b> <i>These occupations are 0.1% of Total Demand in FY2033-34</i>	35-2013 35-9099	Cooks, Private Household Food Preparation and Serving Related Workers, All Other
<b>Personal Care and Service Occupations</b> <i>These occupations are 0.1% of Total Demand in FY2033-34</i>	39-7010 39-9041	Tour and Travel Guides Residential Advisors
<b>Sales and Related Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	41-9012	Models
<b>Office and Administrative Support Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	43-4021 43-9111	Correspondence Clerks Statistical Assistants
<b>Farming, Fishing, and Forestry Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	45-4011 45-4023	Forest and Conservation Workers Log Graders and Scalers
<b>Construction and Extraction Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	47-4051 47-5032	Highway Maintenance Workers Explosives Workers, Ordnance Handling Experts, and Blasters
<b>Installation, Maintenance, and Repair Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	49-9081	Wind Turbine Service Technicians

Areas of Concern by Occupational Group

Occupational Group	SOC Code	SOC Title
<b>Production Occupations</b> <i>These occupations are 0.1% of Total Demand in FY2033-34</i>	51-3023	Slaughterers and Meat Packers
	51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4051	Metal-Refining Furnace Operators and Tenders
	51-4111	Tool and Die Makers
	51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-4192	Layout Workers, Metal and Plastic
	51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-6092	Fabric and Apparel Patternmakers
	51-8021	Stationary Engineers and Boiler Operators
	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	51-9191	Adhesive Bonding Machine Operators and Tenders
	51-9193	Cooling and Freezing Equipment Operators and Tenders
<b>Transportation and Material Moving Occupations</b> <i>These occupations are 0.0% of Total Demand in FY2033-34</i>	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
	53-4011	Locomotive Engineers
	53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
	53-4031	Railroad Conductors and Yardmasters
	53-5011	Sailors and Marine Oilers
	53-7041	Hoist and Winch Operators

Demand for the above occupations in FY2033-34 is 6.0% of Total Demand across 832 occupations

## Summary of Results

Local Workforce Development Boards		Occupational Areas of Concern
Workforce Region 1	CareerSource Escarosa	45
Workforce Region 2	CareerSource Okaloosa Walton	52
Workforce Region 3	CareerSource Chipola	7
Workforce Region 4	CareerSource Gulf Coast	11
Workforce Region 5	CareerSource Capital Region	26
Workforce Region 6	CareerSource North Florida	12
Workforce Region 8	CareerSource Northeast Florida	152
Workforce Region 10	CareerSource Citrus Levy Marion	36
Workforce Region 12	CareerSource Central Florida	244
Workforce Region 16	CareerSource Pasco Hernando	94
Workforce Region 17	CareerSource Polk	167
Workforce Region 18	CareerSource Suncoast	121
Workforce Region 19	CareerSource Heartland	8
Workforce Region 20	CareerSource Research Coast	85
Workforce Region 21	CareerSource Palm Beach County	59
Workforce Region 22	CareerSource Broward	62
Workforce Region 23	CareerSource South Florida	69
Workforce Region 24	CareerSource Southwest Florida	122
Workforce Region 26	CareerSource North Central Florida	43
Workforce Region 27	CareerSource Brevard Flagler Volusia	68
Workforce Region 28	CareerSource Hillsborough Pinellas	84

**Workforce Region 1 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b>	35-9099	Food Preparation and Serving Related Workers, All Other
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3023	Slaughterers and Meat Packers
<b>High school diploma or equivalent</b>	31-1120	Home Health and Personal Care Aides
	39-4021	Funeral Attendants
	39-7010	Tour and Travel Guides
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-2031	Engine and Other Machine Assemblers
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
<b>Some college, no degree</b>	39-9041	Residential Advisors
<b>Postsecondary nondegree award</b>	29-2061	Licensed Practical and Licensed Vocational Nurses
	31-1131	Nursing Assistants
	35-2013	Cooks, Private Household
	51-4111	Tool and Die Makers
	51-8021	Stationary Engineers and Boiler Operators
<b>Associate's degree</b>	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	49-9081	Wind Turbine Service Technicians
<b>Bachelor's degree</b>	17-2041	Chemical Engineers
	17-2171	Petroleum Engineers
	19-2042	Geoscientists, Except Hydrologists and Geographers
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-2057	Special Education Teachers, Middle School
	25-4013	Museum Technicians and Conservators
	25-9099	Educational Instruction and Library Workers, All Other
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
	15-2041	Statisticians
<b>Master's degree</b>	19-1022	Microbiologists
	19-3094	Political Scientists
	21-2011	Clergy
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
<b>Doctoral or professional degree</b>	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	29-1215	Family Medicine Physicians



**Workforce Region 2 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b> <b>High school diploma or equivalent</b>	35-9099	Food Preparation and Serving Related Workers, All Other
	11-9131	Postmasters and Mail Superintendents
	31-1120	Home Health and Personal Care Aides
	43-5011	Cargo and Freight Agents
	47-2221	Structural Iron and Steel Workers
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	49-9069	Precision Instrument and Equipment Repairers, All Other
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	41-3011	Advertising Sales Agents
<b>Some college, no degree</b> <b>Postsecondary nondegree award</b>	29-2042	Emergency Medical Technicians
	29-2061	Licensed Practical and Licensed Vocational Nurses
	31-1131	Nursing Assistants
	31-9094	Medical Transcriptionists
	35-2013	Cooks, Private Household
	51-4111	Tool and Die Makers
	51-8021	Stationary Engineers and Boiler Operators
	51-9161	Computer Numerically Controlled Tool Operators
	17-3021	Aerospace Engineering and Operations Technologists and Technicians
	17-3026	Industrial Engineering Technologists and Technicians
<b>Associate's degree</b>	17-3027	Mechanical Engineering Technologists and Technicians
	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2161	Nuclear Engineers
	17-2171	Petroleum Engineers
	19-2031	Chemists
<b>Bachelor's degree</b>	19-2099	Physical Scientists, All Other
	19-4021	Biological Technicians
	21-2021	Directors, Religious Activities and Education
	25-2057	Special Education Teachers, Middle School
	25-4013	Museum Technicians and Conservators
	27-1011	Art Directors
	27-3041	Editors
	29-1141	Registered Nurses
	33-9021	Private Detectives and Investigators
	43-9111	Statistical Assistants
<b>Master's degree</b>	11-9039	Education Administrators, All Other
	15-2041	Statisticians
	19-1022	Microbiologists
	19-3094	Political Scientists
	21-2011	Clergy
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	19-2012	Physicists
	19-3033	Clinical and Counseling Psychologists
<b>Doctoral or professional degree</b>	25-1022	Mathematical Science Teachers, Postsecondary
	29-1215	Family Medicine Physicians

Workforce Region 3 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
High school diploma or equivalent	11-9131	Postmasters and Mail Superintendents
	31-1120	Home Health and Personal Care Aides
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
Postsecondary nondegree award	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4071	Forest and Conservation Technicians
Bachelor's degree	21-2021	Directors, Religious Activities and Education

Workforce Region 4 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
High school diploma or equivalent	31-1120	Home Health and Personal Care Aides
	47-4051	Highway Maintenance Workers
Postsecondary nondegree award	35-2013	Cooks, Private Household
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4071	Forest and Conservation Technicians
	29-2035	Magnetic Resonance Imaging Technologists
Bachelor's degree	17-2041	Chemical Engineers
	19-2042	Geoscientists, Except Hydrologists and Geographers
	21-2021	Directors, Religious Activities and Education
Master's degree	29-1151	Nurse Anesthetists
Doctoral or professional degree	19-2012	Physicists

Workforce Region 5 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
High school diploma or equivalent	11-9131	Postmasters and Mail Superintendents
	31-1120	Home Health and Personal Care Aides
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
Some college, no degree	33-2022	Forest Fire Inspectors and Prevention Specialists
Postsecondary nondegree award	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4071	Forest and Conservation Technicians
	29-2035	Magnetic Resonance Imaging Technologists
Bachelor's degree	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2171	Petroleum Engineers
	19-1099	Life Scientists, All Other
	21-2021	Directors, Religious Activities and Education
	29-1125	Recreational Therapists
	43-9111	Statistical Assistants
	19-1022	Microbiologists
	25-4011	Archivists
Master's degree	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1053	Environmental Science Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary

Workforce Region 6 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	51-3023	Slaughterers and Meat Packers
	11-9131	Postmasters and Mail Superintendents
High school diploma or equivalent	31-1120	Home Health and Personal Care Aides
	45-4021	Fallers
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
Postsecondary nondegree award	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4071	Forest and Conservation Technicians
Bachelor's degree	17-2041	Chemical Engineers

Workforce Region 8 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	35-9099	Food Preparation and Serving Related Workers, All Other
	45-2041	Graders and Sorters, Agricultural Products
	45-2091	Agricultural Equipment Operators
	47-3016	Helpers--Roofers
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3023	Slaughtering and Meat Packers
	51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
	51-3099	Food Processing Workers, All Other
	51-6051	Sewers, Hand
	51-9031	Cutters and Trimmers, Hand
High school diploma or equivalent	27-2031	Dancers
	31-1120	Home Health and Personal Care Aides
	33-3041	Parking Enforcement Workers
	39-3093	Locker Room, Coatroom, and Dressing Room Attendants
	39-4012	Crematory Operators
	39-7010	Tour and Travel Guides
	41-9012	Models
	43-2099	Communications Equipment Operators, All Other
	43-4021	Correspondence Clerks
	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
	45-4023	Log Graders and Scalers
	47-2022	Stonemasons
	47-4051	Highway Maintenance Workers
	47-4061	Rail-Track Laying and Maintenance Equipment Operators
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	49-3043	Rail Car Repairers
	49-3091	Bicycle Repairers
	49-9063	Musical Instrument Repairers and Tuners
	49-9069	Precision Instrument and Equipment Repairers, All Other
	51-2021	Coil Winders, Tapers, and Finishers
	51-2031	Engine and Other Machine Assemblers
	51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4051	Metal-Refining Furnace Operators and Tenders
	51-4071	Foundry Mold and Coremakers
	51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4194	Tool Grinders, Filers, and Sharpeners
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6099	Textile, Apparel, and Furnishings Workers, All Other
	51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
	51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
	51-8012	Power Distributors and Dispatchers
	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	51-9191	Adhesive Bonding Machine Operators and Tenders
	51-9197	Tire Builders
	53-4011	Locomotive Engineers
	53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
	53-4031	Railroad Conductors and Yardmasters
	53-5011	Sailors and Marine Oilers
	53-6099	Transportation Workers, All Other
Some college, no degree	27-2032	Choreographers
	27-2042	Musicians and Singers
	33-2022	Forest Fire Inspectors and Prevention Specialists
Postsecondary nondegree award	39-9041	Residential Advisors
	43-4041	Credit Authorizers, Checkers, and Clerks
	19-5012	Occupational Health and Safety Technicians
	29-2036	Medical Dosimetrists
	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	33-9011	Animal Control Workers
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment
	49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles
	51-4111	Tool and Die Makers
	51-8021	Stationary Engineers and Boiler Operators
	53-5022	Motorboat Operators

Workforce Region 8 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
Associate's degree	17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians
	17-3028	Calibration Technologists and Technicians
	19-4012	Agricultural Technicians
	19-4013	Food Science Technicians
	19-4043	Geological Technicians, Except Hydrologic Technicians
	19-4071	Forest and Conservation Technicians
	27-4012	Broadcast Technicians
	27-4014	Sound Engineering Technicians
	27-4099	Media and Communication Equipment Workers, All Other
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	43-9031	Desktop Publishers
	49-9081	Wind Turbine Service Technicians
	53-6041	Traffic Technicians
Bachelor's degree	11-2033	Fundraising Managers
	11-9013	Farmers, Ranchers, and Other Agricultural Managers
	11-9161	Emergency Management Directors
	13-1075	Labor Relations Specialists
	15-1243	Database Architects
	17-1021	Cartographers and Photogrammetrists
	17-2021	Agricultural Engineers
	17-2041	Chemical Engineers
	17-2061	Computer Hardware Engineers
	17-2131	Materials Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2161	Nuclear Engineers
	17-2171	Petroleum Engineers
	19-1013	Soil and Plant Scientists
	19-1031	Conservation Scientists
	19-1032	Foresters
	19-1099	Life Scientists, All Other
	19-2031	Chemists
	19-2032	Materials Scientists
	19-2042	Geoscientists, Except Hydrologists and Geographers
	19-2099	Physical Scientists, All Other
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	23-1022	Arbitrators, Mediators, and Conciliators
	25-2057	Special Education Teachers, Middle School
	25-4013	Museum Technicians and Conservators
	25-9099	Educational Instruction and Library Workers, All Other
	27-1022	Fashion Designers
	27-1027	Set and Exhibit Designers
	27-2041	Music Directors and Composers
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	33-3031	Fish and Game Wardens
	43-9081	Proofreaders and Copy Markers
Master's degree	43-9111	Statistical Assistants
	11-9039	Education Administrators, All Other
	15-2041	Statisticians
	19-1022	Microbiologists
	19-3011	Economists
	19-3091	Anthropologists and Archeologists
	19-3094	Political Scientists
	21-2011	Clergy
	25-4011	Archivists
	25-4012	Curators
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1161	Nurse Midwives
	29-1171	Nurse Practitioners
	29-2091	Orthotists and Prosthetists
Doctoral or professional degree	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1053	Environmental Science Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1029	Dentists, All Other Specialists
	29-1215	Family Medicine Physicians
	29-1241	Ophthalmologists, Except Pediatric

**Workforce Region 10 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b>	35-9099	Food Preparation and Serving Related Workers, All Other
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
<b>High school diploma or equivalent</b>	31-1120	Home Health and Personal Care Aides
	39-7010	Tour and Travel Guides
	43-9022	Word Processors and Typists
	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
	45-4021	Fallers
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
	51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
<b>Some college, no degree</b>	27-2042	Musicians and Singers
	39-9041	Residential Advisors
	41-3041	Travel Agents
<b>Postsecondary nondegree award</b>	29-2061	Licensed Practical and Licensed Vocational Nurses
	31-1131	Nursing Assistants
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-8021	Stationary Engineers and Boiler Operators
<b>Associate's degree</b>	19-4071	Forest and Conservation Technicians
	29-2033	Nuclear Medicine Technologists
	49-9081	Wind Turbine Service Technicians
<b>Bachelor's degree</b>	17-2041	Chemical Engineers
	17-2171	Petroleum Engineers
	21-2021	Directors, Religious Activities and Education
<b>Master's degree</b>	21-2011	Clergy
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
<b>Doctoral or professional degree</b>	19-2012	Physicists



**Workforce Region 12 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b>	35-2019	Cooks, All Other
	35-9099	Food Preparation and Serving Related Workers, All Other
	41-9011	Demonstrators and Product Promoters
	45-2041	Graders and Sorters, Agricultural Products
	45-2091	Agricultural Equipment Operators
	45-2099	Agricultural Workers, All Other
	47-2142	Paperhangers
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3023	Slaughterers and Meat Packers
	51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
	51-3099	Food Processing Workers, All Other
	51-9031	Cutters and Trimmers, Hand
	53-6031	Automotive and Watercraft Service Attendants
	53-7041	Hoist and Winch Operators
	53-7063	Machine Feeders and Offbearers
<b>High school diploma or equivalent</b>	11-9131	Postmasters and Mail Superintendents
	27-2031	Dancers
	31-1120	Home Health and Personal Care Aides
	33-3011	Bailiffs
	39-3099	Entertainment Attendants and Related Workers, All Other
	39-4012	Crematory Operators
	39-4021	Funeral Attendants
	39-7010	Tour and Travel Guides
	39-9011	Childcare Workers
	41-9012	Models
	43-2021	Telephone Operators
	43-2099	Communications Equipment Operators, All Other
	43-4021	Correspondence Clerks
	43-4061	Eligibility Interviewers, Government Programs
	43-4141	New Accounts Clerks
	43-5041	Meter Readers, Utilities
	43-9022	Word Processors and Typists
	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
	45-4021	Fallers
	45-4022	Logging Equipment Operators
	45-4023	Log Graders and Scalers
	47-2011	Boilermakers
	47-2022	Stonemasons
	47-2072	Pile Driver Operators
	47-2132	Insulation Workers, Mechanical
	47-4051	Highway Maintenance Workers
	47-4061	Rail-Track Laying and Maintenance Equipment Operators
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	47-5081	Helpers--Extraction Workers
	49-3041	Farm Equipment Mechanics and Service Technicians
	49-3043	Rail Car Repairers
	49-3091	Bicycle Repairers
	49-9063	Musical Instrument Repairers and Tuners
	49-9064	Watch and Clock Repairers
	49-9069	Precision Instrument and Equipment Repairers, All Other
	49-9097	Signal and Track Switch Repairers
	51-2021	Coil Winders, Tapers, and Finishers
	51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers
	51-2031	Engine and Other Machine Assemblers
	51-2041	Structural Metal Fabricators and Fitters
	51-2090	Miscellaneous Assemblers and Fabricators
	51-3092	Food Batchmakers
	51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4051	Metal-Refining Furnace Operators and Tenders
	51-4061	Model Makers, Metal and Plastic
	51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-4192	Layout Workers, Metal and Plastic
	51-4194	Tool Grinders, Filers, and Sharpeners
	51-6041	Shoe and Leather Workers and Repairers
	51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders
	51-6062	Textile Cutting Machine Setters, Operators, and Tenders

Workforce Region 12 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
Some college, no degree	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-6092	Fabric and Apparel Patternmakers
	51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
	51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
	51-7099	Woodworkers, All Other
	51-8012	Power Distributors and Dispatchers
	51-8092	Gas Plant Operators
	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
	51-9011	Chemical Equipment Operators and Tenders
	51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
	51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	51-9151	Photographic Process Workers and Processing Machine Operators
	51-9191	Adhesive Bonding Machine Operators and Tenders
	51-9193	Cooling and Freezing Equipment Operators and Tenders
	51-9194	Etchers and Engravers
	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
	53-3052	Bus Drivers, Transit and Intercity
	53-4011	Locomotive Engineers
	53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
	53-4031	Railroad Conductors and Yardmasters
	53-4041	Subway and Streetcar Operators
	53-5011	Sailors and Marine Oilers
	53-6099	Transportation Workers, All Other
	53-7071	Gas Compressor and Gas Pumping Station Operators
	53-7072	Pump Operators, Except Wellhead Pumps
	27-1019	Artists and Related Workers, All Other
	27-2023	Umpires, Referees, and Other Sports Officials
	27-2032	Choreographers
	27-2042	Musicians and Singers
	33-2022	Forest Fire Inspectors and Prevention Specialists
	39-9041	Residential Advisors
	41-9099	Sales and Related Workers, All Other
	43-4041	Credit Authorizers, Checkers, and Clerks
	43-4121	Library Assistants, Clerical
Postsecondary nondegree award	19-5012	Occupational Health and Safety Technicians
	29-2036	Medical Dosimetrists
	29-2042	Emergency Medical Technicians
	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	31-9094	Medical Transcriptionists
	33-9011	Animal Control Workers
	35-2013	Cooks, Private Household
	39-5092	Manicurists and Pedicurists
	45-4011	Forest and Conservation Workers
	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment
	49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
	49-3021	Automotive Body and Related Repairers
	49-9044	Millwrights
	49-9092	Commercial Divers
	51-4111	Tool and Die Makers
	51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
	51-8021	Stationary Engineers and Boiler Operators
	51-8099	Plant and System Operators, All Other
	51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers
	51-9082	Medical Appliance Technicians
	51-9161	Computer Numerically Controlled Tool Operators
	53-5021	Captains, Mates, and Pilots of Water Vessels
	53-5022	Motorboat Operators

**Workforce Region 12 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>Associate's degree</b>	17-3025	Environmental Engineering Technologists and Technicians
	17-3026	Industrial Engineering Technologists and Technicians
	17-3027	Mechanical Engineering Technologists and Technicians
	17-3028	Calibration Technologists and Technicians
	19-4012	Agricultural Technicians
	19-4013	Food Science Technicians
	19-4031	Chemical Technicians
	19-4043	Geological Technicians, Except Hydrologic Technicians
	19-4051	Nuclear Technicians
	19-4071	Forest and Conservation Technicians
	27-4012	Broadcast Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	33-3052	Transit and Railroad Police
	39-4011	Embalmers
	43-9031	Desktop Publishers
	49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers
	49-9081	Wind Turbine Service Technicians
	51-8091	Chemical Plant and System Operators
	51-9162	Computer Numerically Controlled Tool Programmers
<b>Bachelor's degree</b>	11-2033	Fundraising Managers
	11-3051	Industrial Production Managers
	11-9013	Farmers, Ranchers, and Other Agricultural Managers
	11-9041	Architectural and Engineering Managers
	13-1075	Labor Relations Specialists
	15-1243	Database Architects
	15-1299	Computer Occupations, All Other
	15-2011	Actuaries
	15-2099	Mathematical Science Occupations, All Other
	17-1021	Cartographers and Photogrammetrists
	17-2031	Bioengineers and Biomedical Engineers
	17-2041	Chemical Engineers
	17-2061	Computer Hardware Engineers
	17-2081	Environmental Engineers
	17-2131	Materials Engineers
	17-2141	Mechanical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2161	Nuclear Engineers
	17-2171	Petroleum Engineers
	19-1012	Food Scientists and Technologists
	19-1013	Soil and Plant Scientists
	19-1031	Conservation Scientists
	19-1032	Foresters
	19-1042	Medical Scientists, Except Epidemiologists
	19-1099	Life Scientists, All Other
	19-2031	Chemists
	19-2032	Materials Scientists
	19-2042	Geoscientists, Except Hydrologists and Geographers
	19-2099	Physical Scientists, All Other
	19-3099	Social Scientists and Related Workers, All Other
	19-4021	Biological Technicians
	19-4061	Social Science Research Assistants
	21-1094	Community Health Workers
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-2057	Special Education Teachers, Middle School
	25-4013	Museum Technicians and Conservators
	25-9099	Educational Instruction and Library Workers, All Other
	27-1022	Fashion Designers
	27-1029	Designers, All Other
	27-2041	Music Directors and Composers
	27-3041	Editors
	29-1125	Recreational Therapists
	29-1129	Therapists, All Other
	29-1141	Registered Nurses
	33-3031	Fish and Game Wardens
	41-9031	Sales Engineers
	43-9081	Proofreaders and Copy Markers
	43-9111	Statistical Assistants

**Workforce Region 12 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>Master's degree</b>	11-9039	Education Administrators, All Other
	15-2041	Statisticians
	19-1011	Animal Scientists
	19-1022	Microbiologists
	19-3011	Economists
	19-3022	Survey Researchers
	19-3041	Sociologists
	19-3091	Anthropologists and Archeologists
	19-3093	Historians
	19-3094	Political Scientists
	21-1015	Rehabilitation Counselors
	21-2011	Clergy
	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	29-2091	Orthotists and Prosthetists
<b>Doctoral or professional degree</b>	19-1021	Biochemists and Biophysicists
	19-1041	Epidemiologists
	19-2012	Physicists
	23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1053	Environmental Science Teachers, Postsecondary
	25-1054	Physics Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1022	Oral and Maxillofacial Surgeons
	29-1023	Orthodontists
	29-1081	Podiatrists
	29-1181	Audiologists
	29-1215	Family Medicine Physicians
	29-1221	Pediatricians, General
	29-1224	Radiologists
	29-1241	Ophthalmologists, Except Pediatric

**Workforce Region 16 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b>	35-9099	Food Preparation and Serving Related Workers, All Other
	37-2019	Building Cleaning Workers, All Other
	41-9011	Demonstrators and Product Promoters
	47-2041	Carpet Installers
	47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles
	47-2082	Tapers
	47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3023	Slaughterers and Meat Packers
	51-6052	Tailors, Dressmakers, and Custom Sewers
	31-1120	Home Health and Personal Care Aides
	39-6011	Baggage Porters and Bellhops
	43-5041	Meter Readers, Utilities
	43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service
<b>High school diploma or equivalent</b>	43-9071	Office Machine Operators, Except Computer
	45-4022	Logging Equipment Operators
	47-2171	Reinforcing Iron and Rebar Workers
	47-2231	Solar Photovoltaic Installers
	47-4051	Highway Maintenance Workers
	47-4071	Septic Tank Servicers and Sewer Pipe Cleaners
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	49-3092	Recreational Vehicle Service Technicians
	49-9011	Mechanical Door Repairers
	51-2041	Structural Metal Fabricators and Fitters
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
	51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders
	53-7021	Crane and Tower Operators
	27-2042	Musicians and Singers
	39-9041	Residential Advisors
	43-4121	Library Assistants, Clerical
	27-3092	Court Reporters and Simultaneous Captioners
	29-2061	Licensed Practical and Licensed Vocational Nurses
	31-1131	Nursing Assistants
	31-9094	Medical Transcriptionists
<b>Postsecondary nondegree award</b>	35-2013	Cooks, Private Household
	39-5092	Manicurists and Pedicurists
	49-2097	Audiovisual Equipment Installers and Repairers
	49-9012	Control and Valve Installers and Repairers, Except Mechanical Door
	51-8013	Power Plant Operators
	51-8021	Stationary Engineers and Boiler Operators
	53-2012	Commercial Pilots
	53-5021	Captains, Mates, and Pilots of Water Vessels
	17-3013	Mechanical Drafters
	17-3022	Civil Engineering Technologists and Technicians
<b>Associate's degree</b>	17-3029	Engineering Technologists and Technicians, Except Drafters, All Other
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	39-4031	Morticians, Undertakers, and Funeral Arrangers
	49-9081	Wind Turbine Service Technicians

**Workforce Region 16 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>Bachelor's degree</b>	11-2032	Public Relations Managers
	11-3061	Purchasing Managers
	11-3131	Training and Development Managers
	11-9072	Entertainment and Recreation Managers, Except Gambling
	11-9179	Personal Service Managers, All Other
	13-2031	Budget Analysts
	13-2041	Credit Analysts
	13-2061	Financial Examiners
	13-2071	Credit Counselors
	13-2081	Tax Examiners and Collectors, and Revenue Agents
	17-1012	Landscape Architects
	17-2141	Mechanical Engineers
	17-2171	Petroleum Engineers
	19-4021	Biological Technicians
	19-4092	Forensic Science Technicians
	19-4099	Life, Physical, and Social Science Technicians, All Other
	21-1094	Community Health Workers
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-2057	Special Education Teachers, Middle School
	25-9099	Educational Instruction and Library Workers, All Other
	27-2041	Music Directors and Composers
	27-3042	Technical Writers
	27-4031	Camera Operators, Television, Video, and Film
	29-1141	Registered Nurses
	29-9091	Athletic Trainers
<b>Master's degree</b>	21-2011	Clergy
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	29-1291	Acupuncturists
<b>Doctoral or professional degree</b>	19-2012	Physicists
	25-1067	Sociology Teachers, Postsecondary
	29-1081	Podiatrists
	29-1212	Cardiologists
	29-1213	Dermatologists
	29-1215	Family Medicine Physicians
	29-1222	Physicians, Pathologists
	29-1224	Radiologists
	29-1242	Orthopedic Surgeons, Except Pediatric
	29-1249	Surgeons, All Other

**Workforce Region 17 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b>	35-2019	Cooks, All Other
	35-9099	Food Preparation and Serving Related Workers, All Other
	37-2019	Building Cleaning Workers, All Other
	41-9011	Demonstrators and Product Promoters
	45-2041	Graders and Sorters, Agricultural Products
	47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles
	47-2082	Tapers
	47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters
	47-3014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons
	47-3016	Helpers--Roofers
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
	51-3099	Food Processing Workers, All Other
	51-6021	Pressers, Textile, Garment, and Related Materials
	51-6052	Tailors, Dressmakers, and Custom Sewers
	53-6031	Automotive and Watercraft Service Attendants
	53-7121	Tank Car, Truck, and Ship Loaders
<b>High school diploma or equivalent</b>	31-1120	Home Health and Personal Care Aides
	31-1133	Psychiatric Aides
	39-4021	Funeral Attendants
	43-4141	New Accounts Clerks
	43-5041	Meter Readers, Utilities
	43-9022	Word Processors and Typists
	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
	45-4022	Logging Equipment Operators
	45-4023	Log Graders and Scalers
	47-2011	Boilermakers
	47-2171	Reinforcing Iron and Rebar Workers
	47-2231	Solar Photovoltaic Installers
	47-4051	Highway Maintenance Workers
	47-4061	Rail-Track Laying and Maintenance Equipment Operators
	47-5023	Earth Drillers, Except Oil and Gas
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	49-3041	Farm Equipment Mechanics and Service Technicians
	49-3052	Motorcycle Mechanics
	49-9011	Mechanical Door Repairers
	49-9094	Locksmiths and Safe Repairers
	49-9096	Riggers
	51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishes
	51-2031	Engine and Other Machine Assemblers
	51-2041	Structural Metal Fabricators and Fitters
	51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-4199	Metal Workers and Plastic Workers, All Other
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-6093	Upholsterers
	51-7021	Furniture Finishers
	51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
	51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
	51-7099	Woodworkers, All Other
	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
	51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9123	Painting, Coating, and Decorating Workers
	51-9193	Cooling and Freezing Equipment Operators and Tenders
	51-9197	Tire Builders
	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
	53-3052	Bus Drivers, Transit and Intercity
	53-4031	Railroad Conductors and Yardmasters
	53-6032	Aircraft Service Attendants
	53-7072	Pump Operators, Except Wellhead Pumps
<b>Some college, no degree</b>	27-1012	Craft Artists
	27-2021	Athletes and Sports Competitors
	27-2042	Musicians and Singers
	33-1099	First-Line Supervisors of Protective Service Workers, All Other
	39-9041	Residential Advisors
	43-4011	Brokerage Clerks
	43-4121	Library Assistants, Clerical

Workforce Region 17 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
Postsecondary nondegree award	19-5012	Occupational Health and Safety Technicians
	29-2042	Emergency Medical Technicians
	29-2061	Licensed Practical and Licensed Vocational Nurses
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	31-9094	Medical Transcriptionists
	35-2013	Cooks, Private Household
	39-5092	Manicurists and Pedicurists
	45-4011	Forest and Conservation Workers
	49-3021	Automotive Body and Related Repairers
	49-9044	Millwrights
	51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4111	Tool and Die Makers
	51-5111	Prepress Technicians and Workers
	51-8021	Stationary Engineers and Boiler Operators
	51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers
	51-9161	Computer Numerically Controlled Tool Operators
	53-5021	Captains, Mates, and Pilots of Water Vessels
Associate's degree	17-3019	Drafters, All Other
	17-3027	Mechanical Engineering Technologists and Technicians
	17-3029	Engineering Technologists and Technicians, Except Drafters, All Other
	29-1124	Radiation Therapists
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	29-2051	Dietetic Technicians
	49-9081	Wind Turbine Service Technicians
	51-8091	Chemical Plant and System Operators
	51-9162	Computer Numerically Controlled Tool Programmers
	53-6041	Traffic Technicians
Bachelor's degree	11-2011	Advertising and Promotions Managers
	11-3051	Industrial Production Managers
	11-3111	Compensation and Benefits Managers
	11-9013	Farmers, Ranchers, and Other Agricultural Managers
	11-9041	Architectural and Engineering Managers
	13-1075	Labor Relations Specialists
	15-1243	Database Architects
	15-2011	Actuaries
	17-1012	Landscape Architects
	17-2011	Aerospace Engineers
	17-2041	Chemical Engineers
	17-2081	Environmental Engineers
	17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
	17-2141	Mechanical Engineers
	17-2171	Petroleum Engineers
	19-1012	Food Scientists and Technologists
	19-1029	Biological Scientists, All Other
	19-2031	Chemists
	19-2042	Geoscientists, Except Hydrologists and Geographers
	19-4021	Biological Technicians
	21-1094	Community Health Workers
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-2057	Special Education Teachers, Middle School
	25-4013	Museum Technicians and Conservators
	25-9099	Educational Instruction and Library Workers, All Other
	27-1011	Art Directors
	27-1014	Special Effects Artists and Animators
	27-1021	Commercial and Industrial Designers
	27-2041	Music Directors and Composers
	27-3041	Editors
	27-4031	Camera Operators, Television, Video, and Film
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	29-9091	Athletic Trainers
	41-9031	Sales Engineers
	43-9111	Statistical Assistants



**Workforce Region 17 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>Master's degree</b>	11-9039	Education Administrators, All Other
	15-1221	Computer and Information Research Scientists
	15-2041	Statisticians
	19-1022	Microbiologists
	19-1023	Zoologists and Wildlife Biologists
	21-1015	Rehabilitation Counselors
	21-2011	Clergy
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1161	Nurse Midwives
	29-1171	Nurse Practitioners
	29-1291	Acupuncturists
<b>Doctoral or professional degree</b>	19-2012	Physicists
	19-3039	Psychologists, All Other
	23-1023	Judges, Magistrate Judges, and Magistrates
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	29-1212	Cardiologists
	29-1213	Dermatologists
	29-1215	Family Medicine Physicians
	29-1216	General Internal Medicine Physicians
	29-1217	Neurologists
	29-1218	Obstetricians and Gynecologists
	29-1221	Pediatricians, General
	29-1224	Radiologists
	29-1242	Orthopedic Surgeons, Except Pediatric
	29-1249	Surgeons, All Other

Workforce Region 18 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	35-2019	Cooks, All Other
	35-9099	Food Preparation and Serving Related Workers, All Other
	37-3019	Grounds Maintenance Workers, All Other
	41-9011	Demonstrators and Product Promoters
	45-2091	Agricultural Equipment Operators
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3023	Slaughterers and Meat Packers
	51-3099	Food Processing Workers, All Other
	51-6021	Pressers, Textile, Garment, and Related Materials
	53-7011	Conveyor Operators and Tenders
	53-7063	Machine Feeders and Offbearers
High school diploma or equivalent	27-2031	Dancers
	31-1120	Home Health and Personal Care Aides
	31-1133	Psychiatric Aides
	39-5093	Shampooers
	39-7010	Tour and Travel Guides
	43-9022	Word Processors and Typists
	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
	47-2011	Boilermakers
	47-2072	Pile Driver Operators
	47-2132	Insulation Workers, Mechanical
	47-4051	Highway Maintenance Workers
	47-4071	Septic Tank Servicers and Sewer Pipe Cleaners
	49-2092	Electric Motor, Power Tool, and Related Repairers
	49-3041	Farm Equipment Mechanics and Service Technicians
	49-3052	Motorcycle Mechanics
	49-3091	Bicycle Repairers
	49-9096	Riggers
	51-2031	Engine and Other Machine Assemblers
	51-3093	Food Cooking Machine Operators and Tenders
	51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-4192	Layout Workers, Metal and Plastic
	51-4199	Metal Workers and Plastic Workers, All Other
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
	51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9083	Ophthalmic Laboratory Technicians
	53-2031	Flight Attendants
	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
Some college, no degree	27-2032	Choreographers
	27-2042	Musicians and Singers
	39-9041	Residential Advisors
	43-4121	Library Assistants, Clerical
Postsecondary nondegree award	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	49-9044	Millwrights
	51-4111	Tool and Die Makers
	51-5111	Prepress Technicians and Workers
	51-8021	Stationary Engineers and Boiler Operators
	53-5022	Motorboat Operators
Associate's degree	17-3027	Mechanical Engineering Technologists and Technicians
	19-4031	Chemical Technicians
	29-1124	Radiation Therapists
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	29-2051	Dietetic Technicians
	39-4031	Morticians, Undertakers, and Funeral Arrangers
	49-9081	Wind Turbine Service Technicians
	51-8091	Chemical Plant and System Operators
	51-9162	Computer Numerically Controlled Tool Programmers

Workforce Region 18 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
Bachelor's degree	11-2011	Advertising and Promotions Managers
	11-2033	Fundraising Managers
	11-9013	Farmers, Ranchers, and Other Agricultural Managers
	11-9161	Emergency Management Directors
	13-1075	Labor Relations Specialists
	15-1243	Database Architects
	17-2041	Chemical Engineers
	17-2061	Computer Hardware Engineers
	17-2081	Environmental Engineers
	17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors
	17-2141	Mechanical Engineers
	17-2171	Petroleum Engineers
	19-1012	Food Scientists and Technologists
	19-1029	Biological Scientists, All Other
	19-2031	Chemists
	21-1094	Community Health Workers
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-2057	Special Education Teachers, Middle School
	25-4013	Museum Technicians and Conservators
	25-9099	Educational Instruction and Library Workers, All Other
	27-1029	Designers, All Other
	27-2041	Music Directors and Composers
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
	53-2011	Airline Pilots, Copilots, and Flight Engineers
Master's degree	11-9039	Education Administrators, All Other
	15-2041	Statisticians
	19-1022	Microbiologists
	19-1023	Zoologists and Wildlife Biologists
	21-2011	Clergy
	29-1071	Physician Assistants
	29-1128	Exercise Physiologists
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	29-1291	Acupuncturists
Doctoral or professional degree	19-2012	Physicists
	19-3039	Psychologists, All Other
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	29-1212	Cardiologists
	29-1215	Family Medicine Physicians
	29-1218	Obstetricians and Gynecologists
	29-1222	Physicians, Pathologists
	29-1224	Radiologists
	29-1242	Orthopedic Surgeons, Except Pediatric
	29-1249	Surgeons, All Other

Workforce Region 19 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
High school diploma or equivalent	11-9131	Postmasters and Mail Superintendents
	31-1120	Home Health and Personal Care Aides
	47-4051	Highway Maintenance Workers
Postsecondary nondegree award	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4071	Forest and Conservation Technicians
Bachelor's degree	21-2021	Directors, Religious Activities and Education

Workforce Region 20 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	35-9099	Food Preparation and Serving Related Workers, All Other
	47-2082	Tapers
	47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3023	Slaughterers and Meat Packers
	51-3099	Food Processing Workers, All Other
	51-6021	Pressers, Textile, Garment, and Related Materials
	53-7063	Machine Feeders and Offbearers
	11-9131	Postmasters and Mail Superintendents
	31-1120	Home Health and Personal Care Aides
High school diploma or equivalent	39-4021	Funeral Attendants
	43-5041	Meter Readers, Utilities
	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
	47-2171	Reinforcing Iron and Rebar Workers
	47-4051	Highway Maintenance Workers
	49-3041	Farm Equipment Mechanics and Service Technicians
	49-3092	Recreational Vehicle Service Technicians
	49-9043	Maintenance Workers, Machinery
	51-2031	Engine and Other Machine Assemblers
	51-3093	Food Cooking Machine Operators and Tenders
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-6042	Shoe Machine Operators and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-7021	Furniture Finishers
	51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
	51-9011	Chemical Equipment Operators and Tenders
	51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders
	51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders
	51-9191	Adhesive Bonding Machine Operators and Tenders
Some college, no degree	27-2042	Musicians and Singers
	39-9041	Residential Advisors
	43-3099	Financial Clerks, All Other
Postsecondary nondegree award	27-3092	Court Reporters and Simultaneous Captioners
	29-2061	Licensed Practical and Licensed Vocational Nurses
	31-1131	Nursing Assistants
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
	49-9012	Control and Valve Installers and Repairers, Except Mechanical Door
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	17-3021	Aerospace Engineering and Operations Technologists and Technicians
	17-3026	Industrial Engineering Technologists and Technicians
	17-3029	Engineering Technologists and Technicians, Except Drafters, All Other
	19-4031	Chemical Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	29-2051	Dietetic Technicians
	49-9081	Wind Turbine Service Technicians
Bachelor's degree	11-3131	Training and Development Managers
	11-9013	Farmers, Ranchers, and Other Agricultural Managers
	13-1075	Labor Relations Specialists
	17-2041	Chemical Engineers
	17-2081	Environmental Engineers
	17-2171	Petroleum Engineers
	19-1031	Conservation Scientists
	21-1094	Community Health Workers
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-2057	Special Education Teachers, Middle School
	25-9099	Educational Instruction and Library Workers, All Other
	27-2041	Music Directors and Composers
	27-3042	Technical Writers
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	29-9091	Athletic Trainers

Workforce Region 20 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
Master's degree	11-9039	Education Administrators, All Other
	21-2011	Clergy
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
Doctoral or professional degree	19-2012	Physicists
	23-1023	Judges, Magistrate Judges, and Magistrates
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1181	Audiologists
	29-1213	Dermatologists
	29-1215	Family Medicine Physicians
	29-1242	Orthopedic Surgeons, Except Pediatric

Workforce Region 21 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential High school diploma or equivalent	51-3023	Slaughterers and Meat Packers
	31-1120	Home Health and Personal Care Aides
	41-9012	Models
	43-4021	Correspondence Clerks
	45-4021	Fallers
	45-4023	Log Graders and Scalers
	47-2132	Insulation Workers, Mechanical
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-4192	Layout Workers, Metal and Plastic
	51-4194	Tool Grinders, Filers, and Sharpeners
	51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	53-5011	Sailors and Marine Oilers
Some college, no degree	27-2032	Choreographers
	33-2022	Forest Fire Inspectors and Prevention Specialists
Postsecondary nondegree award	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4071	Forest and Conservation Technicians
	49-9081	Wind Turbine Service Technicians
Bachelor's degree	11-2033	Fundraising Managers
	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2161	Nuclear Engineers
	17-2171	Petroleum Engineers
	19-1013	Soil and Plant Scientists
	19-2032	Materials Scientists
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
	19-1022	Microbiologists
	19-3094	Political Scientists
	21-2011	Clergy
Master's degree	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
Doctoral or professional degree	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1243	Pediatric Surgeons

Workforce Region 22 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	51-3023	Slaughterers and Meat Packers
	51-9031	Cutters and Trimmers, Hand
High school diploma or equivalent	31-1120	Home Health and Personal Care Aides
	43-4021	Correspondence Clerks
	45-4021	Fallers
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4192	Layout Workers, Metal and Plastic
	51-4194	Tool Grinders, Filers, and Sharpeners
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6092	Fabric and Apparel Patternmakers
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
	53-5011	Sailors and Marine Oilers
	27-2032	Choreographers
Some college, no degree	19-5012	Occupational Health and Safety Technicians
	29-2061	Licensed Practical and Licensed Vocational Nurses
Postsecondary nondegree award	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-4111	Tool and Die Makers
	51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	49-9081	Wind Turbine Service Technicians
Bachelor's degree	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2171	Petroleum Engineers
	19-1099	Life Scientists, All Other
	19-2032	Materials Scientists
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
Master's degree	19-3094	Political Scientists
	21-2011	Clergy
	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
Doctoral or professional degree	29-1171	Nurse Practitioners
	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1215	Family Medicine Physicians
	29-1243	Pediatric Surgeons



Workforce Region 23 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	51-3023	Slaughterers and Meat Packers
	53-7041	Hoist and Winch Operators
High school diploma or equivalent	31-1120	Home Health and Personal Care Aides
	41-9012	Models
	43-4021	Correspondence Clerks
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4051	Metal-Refining Furnace Operators and Tenders
	51-4194	Tool Grinders, Filers, and Sharpeners
	51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	51-6092	Fabric and Apparel Patternmakers
	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
	53-4011	Locomotive Engineers
	53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers
	53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
	53-6099	Transportation Workers, All Other
Some college, no degree	27-2032	Choreographers
	33-2022	Forest Fire Inspectors and Prevention Specialists
Postsecondary nondegree award	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-4111	Tool and Die Makers
	51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
	51-8021	Stationary Engineers and Boiler Operators
	19-4071	Forest and Conservation Technicians
Associate's degree	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	49-9081	Wind Turbine Service Technicians
Bachelor's degree	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2171	Petroleum Engineers
	19-1031	Conservation Scientists
	19-1099	Life Scientists, All Other
	19-2031	Chemists
	19-2032	Materials Scientists
	19-2042	Geoscientists, Except Hydrologists and Geographers
	21-2021	Directors, Religious Activities and Education
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
	15-2041	Statisticians
	19-1011	Animal Scientists
	19-1022	Microbiologists
Master's degree	19-3011	Economists
	19-3093	Historians
	21-2011	Clergy
	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
Doctoral or professional degree	25-1053	Environmental Science Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1215	Family Medicine Physicians

**Workforce Region 24 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b>	35-9099	Food Preparation and Serving Related Workers, All Other
	45-2091	Agricultural Equipment Operators
	45-2099	Agricultural Workers, All Other
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers
	51-3023	Slaughterers and Meat Packers
	51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
<b>High school diploma or equivalent</b>	51-6051	Sewers, Hand
	11-9131	Postmasters and Mail Superintendents
	27-2031	Dancers
	31-1120	Home Health and Personal Care Aides
	31-1133	Psychiatric Aides
	33-3041	Parking Enforcement Workers
	39-3099	Entertainment Attendants and Related Workers, All Other
	39-7010	Tour and Travel Guides
	41-9012	Models
	43-4141	New Accounts Clerks
	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
	45-4021	Fallers
	45-4022	Logging Equipment Operators
	47-2132	Insulation Workers, Mechanical
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	49-3041	Farm Equipment Mechanics and Service Technicians
	49-3091	Bicycle Repairers
	49-9063	Musical Instrument Repairers and Tuners
	51-2031	Engine and Other Machine Assemblers
	51-2041	Structural Metal Fabricators and Fitters
	51-3093	Food Cooking Machine Operators and Tenders
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6099	Textile, Apparel, and Furnishings Workers, All Other
	51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
	51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
	51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	53-1041	Aircraft Cargo Handling Supervisors
	53-5011	Sailors and Marine Oilers
	53-6051	Transportation Inspectors
	53-6061	Passenger Attendants
	53-7072	Pump Operators, Except Wellhead Pumpers
<b>Some college, no degree</b>	27-2032	Choreographers
	27-2042	Musicians and Singers
	33-2022	Forest Fire Inspectors and Prevention Specialists
	39-9041	Residential Advisors
	53-2022	Airfield Operations Specialists
<b>Postsecondary nondegree award</b>	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
	51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4111	Tool and Die Makers
	51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
	51-8021	Stationary Engineers and Boiler Operators
	51-8099	Plant and System Operators, All Other
	53-5022	Motorboat Operators
<b>Associate's degree</b>	17-3021	Aerospace Engineering and Operations Technologists and Technicians
	17-3027	Mechanical Engineering Technologists and Technicians
	19-4012	Agricultural Technicians
	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers
	49-9081	Wind Turbine Service Technicians
	51-9162	Computer Numerically Controlled Tool Programmers
	53-6041	Traffic Technicians

**Workforce Region 24 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>Bachelor's degree</b>	11-2033	Fundraising Managers
	11-3111	Compensation and Benefits Managers
	11-9013	Farmers, Ranchers, and Other Agricultural Managers
	13-1075	Labor Relations Specialists
	15-1243	Database Architects
	15-2011	Actuaries
	17-2031	Bioengineers and Biomedical Engineers
	17-2041	Chemical Engineers
	17-2061	Computer Hardware Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2171	Petroleum Engineers
	19-1013	Soil and Plant Scientists
	19-1031	Conservation Scientists
	19-1099	Life Scientists, All Other
	19-2031	Chemists
	19-2043	Hydrologists
	19-3099	Social Scientists and Related Workers, All Other
	19-4021	Biological Technicians
	19-4061	Social Science Research Assistants
	21-1094	Community Health Workers
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-2057	Special Education Teachers, Middle School
	25-9099	Educational Instruction and Library Workers, All Other
	27-1027	Set and Exhibit Designers
	27-1029	Designers, All Other
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
<b>Master's degree</b>	11-9039	Education Administrators, All Other
	19-3094	Political Scientists
	21-2011	Clergy
	25-4011	Archivists
	25-9021	Farm and Home Management Educators
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	29-1299	Healthcare Diagnosing or Treating Practitioners, All Other
	29-2091	Orthotists and Prosthetists
<b>Doctoral or professional degree</b>	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1181	Audiologists
	29-1215	Family Medicine Physicians
	29-1221	Pediatricians, General
	29-1241	Ophthalmologists, Except Pediatric

**Workforce Region 26 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>High school diploma or equivalent</b>	31-1120	Home Health and Personal Care Aides
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
<b>Some college, no degree</b>	51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers
	39-9041	Residential Advisors
<b>Postsecondary nondegree award</b>	29-2061	Licensed Practical and Licensed Vocational Nurses
	31-1131	Nursing Assistants
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-4111	Tool and Die Makers
<b>Associate's degree</b>	51-8021	Stationary Engineers and Boiler Operators
	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
<b>Bachelor's degree</b>	13-1075	Labor Relations Specialists
	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2171	Petroleum Engineers
	19-2031	Chemists
	21-2021	Directors, Religious Activities and Education
	25-2057	Special Education Teachers, Middle School
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
<b>Master's degree</b>	19-1022	Microbiologists
	19-3094	Political Scientists
	21-2011	Clergy
	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
<b>Doctoral or professional degree</b>	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1053	Environmental Science Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1215	Family Medicine Physicians

**Workforce Region 27 - Occupational Areas of Concern by Educational Requirement**

<b>Educational Requirement</b>	<b>SOC Code</b>	<b>SOC Title</b>
<b>No formal educational credential</b>	35-9099	Food Preparation and Serving Related Workers, All Other
	51-3099	Food Processing Workers, All Other
<b>High school diploma or equivalent</b>	31-1120	Home Health and Personal Care Aides
	39-7010	Tour and Travel Guides
	45-4021	Fallers
	47-2132	Insulation Workers, Mechanical
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
	53-5011	Sailors and Marine Oilers
<b>Some college, no degree</b>	27-2032	Choreographers
	39-9041	Residential Advisors
<b>Postsecondary nondegree award</b>	29-2061	Licensed Practical and Licensed Vocational Nurses
	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-4111	Tool and Die Makers
	51-8021	Stationary Engineers and Boiler Operators
<b>Associate's degree</b>	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	49-9081	Wind Turbine Service Technicians
<b>Bachelor's degree</b>	11-2033	Fundraising Managers
	13-1075	Labor Relations Specialists
	15-1243	Database Architects
	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2171	Petroleum Engineers
	19-1099	Life Scientists, All Other
	19-2031	Chemists
	19-2032	Materials Scientists
	19-2099	Physical Scientists, All Other
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-4013	Museum Technicians and Conservators
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants
<b>Master's degree</b>	15-2041	Statisticians
	19-1011	Animal Scientists
	19-1022	Microbiologists
	19-3094	Political Scientists
	21-2011	Clergy
	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
	29-1171	Nurse Practitioners
<b>Doctoral or professional degree</b>	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1215	Family Medicine Physicians

Workforce Region 28 - Occupational Areas of Concern by Educational Requirement

Educational Requirement	SOC Code	SOC Title
No formal educational credential	51-3023	Slaughterers and Meat Packers
	51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders
	53-7041	Hoist and Winch Operators
High school diploma or equivalent	31-1120	Home Health and Personal Care Aides
	43-4021	Correspondence Clerks
	45-4021	Fallers
	45-4023	Log Graders and Scalers
	47-4051	Highway Maintenance Workers
	47-5032	Explosives Workers, Ordnance Handling Experts, and Blasters
	51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic
	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic
	51-4071	Foundry Mold and Coremakers
	51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic
	51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders
	51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders
	51-6064	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders
	51-6092	Fabric and Apparel Patternmakers
	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers
	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders
	51-9151	Photographic Process Workers and Processing Machine Operators
	51-9191	Adhesive Bonding Machine Operators and Tenders
	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians
	53-4031	Railroad Conductors and Yardmasters
	53-5011	Sailors and Marine Oilers
	53-7071	Gas Compressor and Gas Pumping Station Operators
Some college, no degree	27-2032	Choreographers
	19-5012	Occupational Health and Safety Technicians
	29-2061	Licensed Practical and Licensed Vocational Nurses
Postsecondary nondegree award	29-2092	Hearing Aid Specialists
	31-1131	Nursing Assistants
	31-2022	Physical Therapist Aides
	33-9011	Animal Control Workers
	35-2013	Cooks, Private Household
	45-4011	Forest and Conservation Workers
	51-4111	Tool and Die Makers
	51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
	51-8021	Stationary Engineers and Boiler Operators
Associate's degree	19-4012	Agricultural Technicians
	19-4071	Forest and Conservation Technicians
	29-2031	Cardiovascular Technologists and Technicians
	29-2033	Nuclear Medicine Technologists
	29-2035	Magnetic Resonance Imaging Technologists
	49-9081	Wind Turbine Service Technicians
Bachelor's degree	51-8091	Chemical Plant and System Operators
	17-2021	Agricultural Engineers
	17-2041	Chemical Engineers
	17-2151	Mining and Geological Engineers, Including Mining Safety Engineers
	17-2161	Nuclear Engineers
	17-2171	Petroleum Engineers
	19-1012	Food Scientists and Technologists
	19-1013	Soil and Plant Scientists
	19-1031	Conservation Scientists
	19-1099	Life Scientists, All Other
	19-2031	Chemists
	19-2032	Materials Scientists
	19-2042	Geoscientists, Except Hydrologists and Geographers
	19-2099	Physical Scientists, All Other
	21-2021	Directors, Religious Activities and Education
	21-2099	Religious Workers, All Other
	25-4013	Museum Technicians and Conservators
	29-1125	Recreational Therapists
	29-1141	Registered Nurses
	43-9111	Statistical Assistants

<b>Master's degree</b>	15-2041	Statisticians
	19-1022	Microbiologists
	19-3011	Economists
	19-3091	Anthropologists and Archeologists
	19-3094	Political Scientists
	21-2011	Clergy
	25-4011	Archivists
	29-1071	Physician Assistants
	29-1151	Nurse Anesthetists
	29-1171	Nurse Practitioners
<b>Doctoral or professional degree</b>	19-1021	Biochemists and Biophysicists
	19-2012	Physicists
	25-1041	Agricultural Sciences Teachers, Postsecondary
	25-1053	Environmental Science Teachers, Postsecondary
	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary
	25-1067	Sociology Teachers, Postsecondary
	25-1113	Social Work Teachers, Postsecondary
	25-1193	Recreation and Fitness Studies Teachers, Postsecondary
	29-1215	Family Medicine Physicians

## **Labor Market Estimating Conference Methodology – August 2024**

### ***Occupational Classification at the Statewide Level...***

As a starting basis, the analysis used the 2018 Standard Occupational Classification (SOC) taxonomy, comprising 848 civilian occupations. Of those, the US Bureau of Labor Statistics (BLS) Occupational Employment and Wages Statistics program (OEWS) has not published estimates for 28 detailed occupations for fiscal years 2021-22 and 2022-23. These 28 occupations were aggregated to or replaced by 12 occupations, some of which are SOC broad occupations and some of which are OEWS-specific occupational codes. These 12 occupations were added into the complete list of 848, and their 28 counterparts from the 2018 SOC taxonomy were removed. The final occupational list used for this analysis was therefore a blend of the 2018 SOC and 2023 OEWS-specific taxonomies, numbering 832 occupations. The analysis assumes that each of these 832 occupations exists in Florida.

### ***Review of Occupations prior to Labor Supply and Labor Demand Analysis...***

A process refinement was introduced to identify occupations with likely declining employment.

- The Florida Economic Estimating Conference (FEEC) uses the North American Industry Classification System (NAICS) to forecast nonfarm employment by industry. A detailed examination of the employment estimates by industry adopted by the FEEC was conducted to incorporate a particular element from that forecast. The examination produced 15 (2-digit and 3-digit) industries that are expected to decline by the end of the forecast horizon. While the FEEC forecasts the overall level of employment for a range of industries, it does not forecast the types of jobs (staffing patterns) within these industries. The BLS Employment Projections program publishes such staffing patterns by SOC system codes for a range of industries in its industry-occupation matrix. These national staffing patterns were applied to the 15 declining NAICS industries to populate them with the expected types of jobs prevalent in these industries. The goal was to isolate occupations in industries that are likely flat or in decline over the forecast period. Thirty-two occupations were identified as having a dominant share in the 15 declining industries. A dominant share was defined as at least 75 percent of the occupation's total employment concentrated in a declining industry.

A separate process was used for the gambling industry due to the unique nature of its expected evolution in Florida. This added eight occupations related to gambling to the declining occupations grouping, bringing the total to 40 occupations that would be subject to special treatment in both the labor supply and labor demand analyses.

### ***Labor Supply...***

The functional labor supply analysis is based on historical labor force and employment data for Florida from BLS and official statewide projections adopted by the FEEC in accordance with ss. 216.133-216.136, Florida Statutes.

The supply determination procedure contained the following steps:

- A ratio of annual occupational employment (including self-employed) to the official labor force projection was calculated for each occupation from Florida's OEWS employment for fiscal years 2021-22 and 2022-23 and Florida's IMPLAN estimates for fiscal year 2021-22. If OEWS data



existed, the maximum ratio was selected, otherwise the IMPLAN ratio was utilized as the representative ratio of labor supply for that occupation. The selected ratios were increased proportionally such that the sum of the employment across all occupations represented 100 percent of the labor force after adjustment for the occupations that were identified as either declining or gambling-related. In this way, these 40 occupations were able to be held constant in the supply analysis.

- To produce labor supply by occupation for each forecasted year, the statewide labor supply was allocated to each occupation based on its ratio—after adjusting for the 40 occupations that were held flat. These ratios were held constant throughout the forecast period.

### ***Labor Demand...***

The labor demand analysis uses a multi-step approach to estimate occupational employment over a 10-year forecast horizon. This approach includes: (1) establishing a base employment value by occupation for FY 2022-23, which was subsequently grown to the base employment FY 2023-24; and (2) conducting a series of tests to determine the best rate by which to grow each occupation. Historical data now encompass a lengthy post-COVID-19 period, so employment gyrations due to COVID-19 should have a minimal effect on future employment estimates. Moreover, lasting demand changes brought about by the COVID and post-COVID economic environments may be more evident.

The base employment determination procedure contained the following steps:

- The governing assumption is that base-year demand must meet or exceed filled jobs. Out of 832 occupations, 765 occupations' base employment utilized the maximum employment from Florida's OEWS employment for either fiscal year 2021-22 or 2022-23.
- The remaining 127 occupations received differentiated base-employment treatment as described below:
  - A maximum OEWS employment was selected from fiscal years 2021-22 and 2022-23.
  - National occupational per capita ratios were calculated for each occupation from 2023 BLS data for the United States and US Census population estimates. These ratios were then applied to Florida's population to produce implied Florida occupational employment.
  - An average of 2022 Florida employment by occupation from IMPLAN and the 2023 National BLS per capita ratios applied to Florida was calculated.
  - If the BLS maximum was greater than the average of IMPLAN and the applied national employment data, the BLS maximum was used; otherwise, the base employment was set to the maximum BLS employment plus 7.5 percent of the difference between the maximum and the average.
- If Florida OEWS employment was missing, Florida IMPLAN employment was used, and if no IMPLAN data was available, the National per capita ratio applied to Florida was used.
- Employment for the 40 occupations identified as either declining or gambling-related were held constant in the forecast to their current levels.
- The resulting employment by occupation was then adjusted to include the self-employed for each occupation using BLS self-employment factors.

### **Growth Rates...**

The growth rate determination procedure contained the following steps:

- To determine the most appropriate growth rate by occupation, the analysis relied on Florida's per capita OEWS employment by occupation (without self-employed) compared to all states and the District of Columbia for fiscal years 2021-22 and 2022-23. A set of per capita ratios were generated using state employment published by BLS and population data published by the US Census Bureau. Published national OEWS estimates by occupation were used for the series mean, and the standard deviation of per capita employment for each occupation for each fiscal year was calculated. By occupation, Florida's ratios were then compared to the national mean in each year and evaluated to see if they fell within one standard deviation relative to all states and DC for which there was published data.
- Next, three analytical tests were applied to determine the appropriate assignment of an occupational growth rate: (1) Florida occupational employment fell outside of one standard deviation for both years; (2) Florida occupational employment was missing for at least one year but fell within one standard deviation for the other year; and (3) Florida occupational employment fell outside of one standard deviation for one year, but fell within one standard deviation for the other year.
  - For the 832 occupations, the results of the standard deviation analysis for the 2021-22 and 2022-23 fiscal years were as follows:

<b>Standard Deviation Analysis (SD)</b>	<b>Number of Occupations</b>
Fell within one SD in both years	659
Fell outside one SD in both years	52
Fell inside one SD in one year only	32
Missing in both years	41
Missing in one year	48

- In general, occupations falling within one SD in both years were assigned the growth rate for Florida's total population with the following exceptions:
  - All teaching and healthcare occupations were designated for independent review, as were all occupations with missing data or failing results.
  - The occupation for legislators was held constant throughout the forecast, as were occupations identified as dominant in declining industries and the gambling-related occupations.
  - Overall, the following growth assignments were made:

<b>Growth Rate</b>	<b>Number of Occupations</b>
Total population	693
Specialized population age group	78
Economic-related variable	14
Held constant	47

### ***Determination of Areas of Concern...***

Areas of concern were identified by comparing the estimates for occupational supply and demand in the 10th year of the forecast to determine where projected demand exceeds expected supply by more than 5 percent. This percentage was reduced from the 10 percent adopted at the Conference held on July 14, 2023, primarily due to the increased value of the underlying data. Relative to last year, additional panels have been added to the data series that reflect partial information from 2023, thereby reducing the number of assumptions that were previously needed to transition to a functional labor market.

Essentially, this condition means that (1) demand exceeds supply currently and will continue to do so in the future, or (2) the growth in future demand will outpace the likely labor supply for that occupation. These findings were produced by independent model runs that simulated each occupation's employment supply and demand trajectories over the forecast period.

Although some occupations have both limited supply and demand, the analysis found that there is reason to believe that a significant gap in supply will exist for 85 out of 832 discrete occupations (10.2 percent). The prior analysis had shown 101 occupations. Note that evolving or emerging trends have yet to be addressed. As such, this analysis does not alter the existing economic structure, meaning the results represent foundational imbalances that would be expected to persist into the future, absent intervention.

- Occupational Areas of Concern (by Educational Requirement): The results of the above analysis were grouped by educational requirement. A total of eight classifications are generally used to represent the typical education level most workers need to enter an occupation: "No formal educational credential," "High school diploma or equivalent," "Some college, no degree," "Postsecondary nondegree award," "Associate's degree," "Bachelor's degree," "Master's degree," and "Doctoral or professional degree." For more details on these groupings, see the sources section. The table below reflects the number of areas of concern by educational requirement:

<b>Educational Requirement</b>	<b>Number of Occupations</b>
No formal educational credential	3
High school diploma or equivalent	30
Some college, no degree	3
Postsecondary nondegree award	10
Associate's degree	5
Bachelor's degree	15
Master's degree	10
Doctoral or professional degree	9

- Occupational Areas of Concern (by Major Occupational Group): The 85 occupations of critical concern were also organized by the 22 major civilian occupational groups of the SOC. At this point, an additional analysis was conducted:
  - By group, the demand for those occupations in the 10th year of the forecast was then compared to the total statewide demand for all occupations.
  - By percentage of demand represented by the occupational areas of concern, two groups stand out: (1) Healthcare Practitioners and Technical Occupations with occupational

areas of concern that represent 3.4 percent of statewide demand in that year; and (2) Healthcare Support Occupations with occupational areas of concern that represent 2.2 percent of statewide demand in that year.

- The healthcare occupations are flagged; however, no action was proposed as part of this analysis until the Live Health Act of 2024 takes full effect.

The table below shows the number of areas of concern by occupational group:

<b>Occupational Group</b>	<b>Number of Occupations</b>
Management Occupations	1
Business and Financial Operations Occupations	0
Computer and Mathematical Occupations	1
Architecture and Engineering Occupations	4
Life, Physical, and Social Science Occupations	13
Community and Social Service Occupations	3
Legal Occupations	0
Educational Instruction and Library Occupations	8
Arts, Design, Entertainment, Sports, and Media Occupations	1
Healthcare Practitioners and Technical Occupations	11
Healthcare Support Occupations	3
Protective Service Occupations	1
Food Preparation and Serving Related Occupations	2
Building and Grounds Cleaning and Maintenance Occupations	0
Personal Care and Service Occupations	2
Sales and Related Occupations	1
Office and Administrative Support Occupations	2
Farming, Fishing, and Forestry Occupations	2
Construction and Extraction Occupations	2
Installation, Maintenance, and Repair Occupations	1
Production Occupations	21
Transportation and Material Moving Occupations	6

## Sources

### *Occupational Taxonomy – Codes and Titles...*

- US Department of Labor, Bureau of Labor Statistics, Standard Occupational Classification System, <https://www.bls.gov/soc/home.htm>

Occupational codes and titles used in this analysis are from the US Department of Labor, Bureau of Labor Statistics, Standard Occupational Classification System and the National Employment Matrix Occupational Coverage, BLS Office of Occupational Statistics and Employment Projections (<https://www.bls.gov/soc/home.htm>). The 2018 Standard Occupational Classification (SOC) is a product of the US Office of Management and Budget.

The 2018 Standard Occupational Classification (SOC) system is a federal statistical standard used by federal agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of 867 detailed occupations according to their occupational definition. Excluding the military occupations, there are 848 civilian occupations. To facilitate classification, detailed occupations are combined to form 459 broad occupations, 98 minor groups, and 23 major groups. Detailed occupations in the SOC with similar job duties, and in some cases skills, education, and/or training, are grouped together. This analysis focuses on the 22 civilian occupational groups and excludes military occupations (major group 55). To reflect changes in the economy and the nature of work, the SOC is revised on a 10-year cycle.

The 2018 SOC taxonomy with the 848 civilian occupations is the starting point. However, data are not yet available for 28 of these detailed occupations. Instead, BLS published aggregated data for 12 occupations representing the 28 detailed occupations, resulting in a total of 832 occupations with published data in this analysis.

The 2018 taxonomy was used in the 2023 LMEC as well. The May 2021 estimates were the first OEWS estimates based solely on survey data collected using the 2018 SOC.

### *Employment by Occupation...*

- State Occupational Employment and Wage Estimates, US Department of Labor, Bureau of Labor Statistics, [https://www.bls.gov/oes/current/oes\\_fl.htm](https://www.bls.gov/oes/current/oes_fl.htm).
- Florida Commerce, Bureau of Workforce Statistics and Economic Research, [OEWS Occupational Employment and Wage Statistics - FloridaJobs.org](https://www.floridajobs.org/oevs).

The Occupational Employment and Wage Statistics (OEWS) survey is a national semiannual survey measuring occupational employment and wage rates for wage and salary workers in nonfarm establishments in the United States. It is the most detailed public source of occupational data available in terms of both occupational nomenclature and local geographies. OEWS estimates are constructed from a sample of about 1.1 million national establishments. The OEWS survey sample is drawn from the database of businesses reporting to the state unemployment insurance (UI) programs. Each year, two semiannual panels of approximately 180,000 to 185,000 sampled establishments are contacted, one panel in May and the other in November. Responses are obtained by mail, internet or other electronic

means, email, telephone, or personal visit. The May 2023 estimates<sup>1</sup> are based on responses from six semiannual panels collected over a 3-year period: May 2023, November 2022, May 2022, November 2021, May 2021, and November 2020 panels. The unweighted sampled employment of 83 million across all six semiannual panels represents approximately 56 percent of total national employment. In Florida, the OEWS survey draws its sample from state Reemployment Assistance (unemployment insurance) files. This data source excludes the self-employed since they are not subject to the Reemployment Assistance tax and the OEWS does not collect data on them. The Florida sample for OEWS is slightly less than 11,000 units (establishments) per survey panel and approximately 66,000 total units over the six panels comprising the data used to publish the annual release.

National self-employment factors were applied to occupational employment based on data from the US Department of Labor, Bureau of Labor Statistics. These factors expand the occupational employment estimates to account for the self-employed. Some occupations, such as barbers and real estate brokers, tend to have more self-employed or sole proprietors (unincorporated businesses) than others. Wages for the OEWS survey are straight-time, gross pay, exclusive of premium pay. Base rate; cost-of-living allowances; guaranteed pay; hazardous-duty pay; incentive pay, including commissions and production bonuses; and tips are included. Excluded are overtime pay, severance pay, shift differentials, nonproduction bonuses, employer cost for supplementary benefits, and tuition reimbursements.

#### *Employment Estimates from IMPLAN...*

IMPLAN ([www.implan.com](http://www.implan.com)) is a proprietary economic modeling platform that combines a set of extensive databases, economic factors, multipliers, and demographic statistics with a highly refined modeling system. IMPLAN is based on an input-output economic model. Input-output analysis is a form of economic analysis based on the interdependencies between economic sectors. Input-output is commonly used to estimate the impacts of “shocks” to an economy and to analyze their resulting ripple effects. IMPLAN data contains 546 sectors representing all private industries in the United States as defined by the North American Industry Classification System (NAICS) codes. Employment, employee compensation, industry expenditures, commodity demands, relationships between industries, and more are collected to form IMPLAN’s ever-growing database.

#### *Educational Requirements...*

A total of eight classifications are generally used to represent the typical education level most workers need to enter an occupation: “No formal educational credential,” “High school diploma or equivalent,” “Some college, no degree,” “Postsecondary nondegree award,” “Associate’s degree,” “Bachelor’s degree,” “Master’s degree,” and “Doctoral or professional degree.”

To assign a unique educational requirement to each occupation, a master list was developed by combining two products: (1) the CIP-SOC crosswalk, provided by the Reimagining Education and Career Help Office (REACH Office); and (2) the Education and Training Assignments by detailed occupation, produced by the US Department of Labor, Bureau of Labor Statistics (BLS). The REACH crosswalk used the BLS 2018 SOC taxonomy. The BLS educational assignments also use the 2018 SOC taxonomy in this analysis.

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<sup>1</sup> The May 2023 estimates were published by BLS in April 2024.

The assignment procedure contained the following steps:

- For occupations that had a one-to-one linkage between the occupation and the educational requirement in the REACH Office crosswalk:
  - A direct assignment was made, preserving the REACH Office code.
- For occupations that had multiple educational requirements in the REACH Office crosswalk:
  - As directed by the REACH Office and the DOE workgroup, 17 occupations (using 2018 SOC counts) were assigned the lower educational requirement.
- For occupations that had “Recognized industry credential” as the educational requirement in the crosswalk:
  - As directed by the REACH and DOE workgroup, 84 occupations (using 2018 SOC counts) were re-named “Postsecondary nondegree award” to match the category name in BLS’s codes (but not necessarily the BLS educational assignment).
- For occupations that were absent from the REACH Office’s crosswalk (209):
  - BLS educational requirement codes were assigned.

Prepared by: Florida Legislature, Office of Economic and Demographic Research  
August 2024

## Recent educator legislation

2024

- Educator Salary Increases
- CS/SB 7002 waives subject area examination and certification fees for certain ESE and Elementary Education teachers and revises mastery of the general knowledge requirements for educator certification

2023

- Educator Salary Increases
- CS/HB 1035: Additional alternative certification pathway via the Teacher Apprenticeship Program
- CS/CS/CS/HB 1537: Extends temporary teacher certificates from 3 to 5 years

2022

- Educator Salary Increases
- CS/SB 896: Educator Certification Pathways for Veterans (Temporary Certification for 5 years)

2021

- Educator Salary Increases

2020

- Educator Salary Increases

2019

- CS/SB 7070: K-12 Education (Temporary Certification extension options)

1

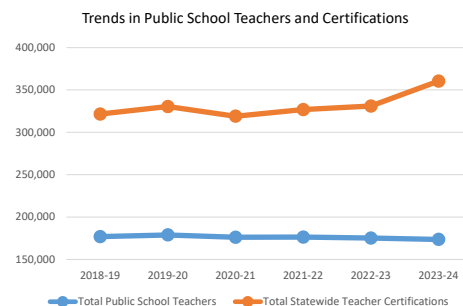
## Public school teacher employment and statewide teacher certifications

	Total Public School Teachers	% Growth	Total Teacher Certifications	% Growth
2018-19	176,984	1.2%	321,497	2.8%
2019-20	179,004	1.1%	330,394	-3.4%
2020-21	176,182	-1.6%	319,064	2.4%
2021-22	176,342	0.1%	326,788	1.3%
2022-23	175,216	-0.6%	331,068	8.9%
2023-24	173,722	-0.9%	360,541	

*The estimating conferences typically view any change within +/- 1% as noise.*

- Public school teacher employment is reflective of many factors, including student enrollment and school district contractual obligations.

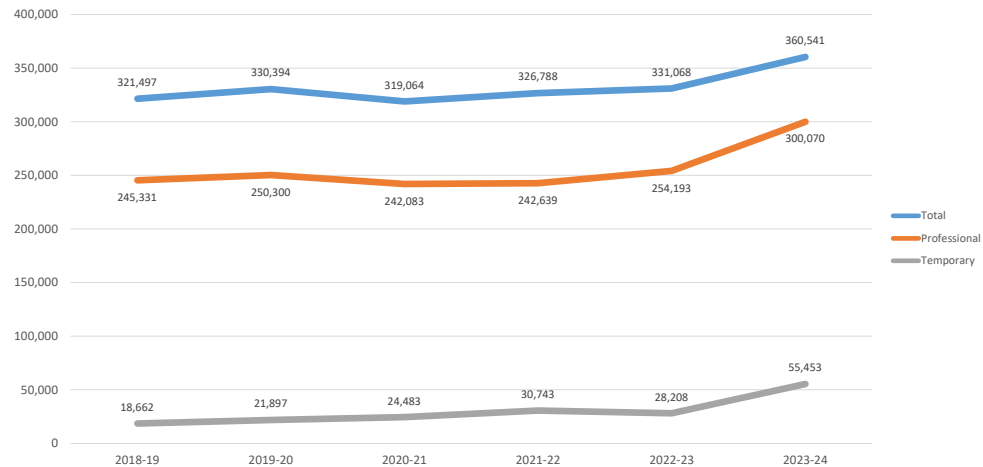
- While overall public school teacher employment has declined relative to 2018-19, the total number of teacher certifications has been on the rise in recent years.



2



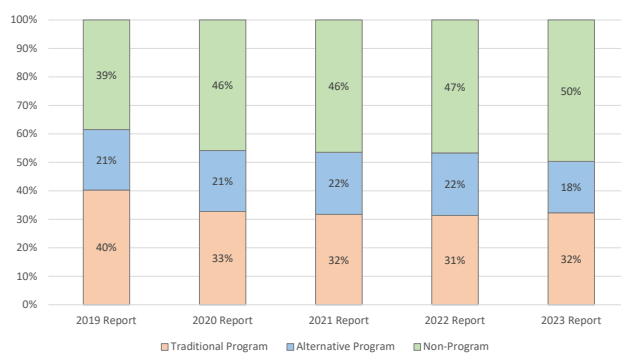
## Statewide teacher certifications by type



Note: Professional and temporary certifications do not sum to total; individuals eligible for a temporary certificate must be hired by a school prior to moving to the temporary status

3

## Professional Education tests passed by program type



Total Professional Education Tests Passed					
	2019 Report	2020 Report	2021 Report	2022 Report	2023 Report
Program Total	16,542	14,367	13,653	14,702	13,127
Non-Program Total	10,358	12,170	11,810	12,845	12,970
Grand Total	26,900	26,537	25,463	27,547	26,097
Percent Change		-1.3%	-4.0%	8.2%	-5.3%

- There are multiple pathways to a Professional Educator Certificate, all of which require passing the Professional Education test
- The number of Professional Education tests taken/passed has declined over time, with an average annual rate of decline of -0.6%
- The share of exam takers/passers from:
  - Traditional Programs (private and public colleges and universities) appear to have stabilized in recent years
  - Alternative Programs have decreased
  - Non-Programs have increased

\*\*Report refers to the Florida Teacher Preparation Programs Annual Program Performance Reports that are released annually in the following calendar year

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## Public School Subject Area Vacancy Rates

School Year	Subject Area Vacancies as of September 1	Number of Subject Area Certifications	Percentage of Certifications	Percentage of Total Teachers
2020-21	3,663	421,783	0.9%	2.1%
2021-22	4,489	442,306	1.0%	2.5%
2022-23	5,547	480,506	1.2%	3.2%
2023-24	4,776	466,233	1.0%	2.7%

Note: Each of these vacancies does not necessarily represent a teacher vacancy, since one teacher may teach courses in multiple subject areas. For example, a district could report two vacancies by subject area, one in chemistry and one in biology, but fill both needs by hiring one science teacher to cover both subject areas. Therefore, because these counts are designed to identify subject area needs, they will be higher than the actual number of teachers that districts need to hire.

5

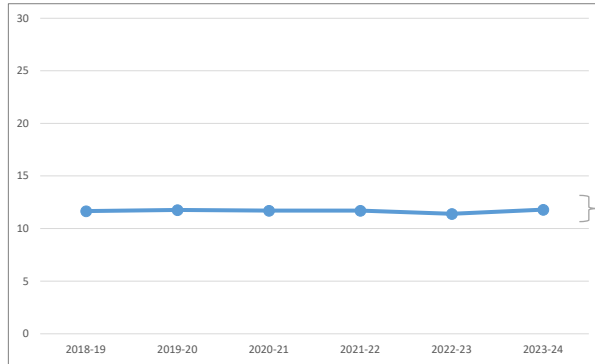
## Largest percent of certification area courses taught by a teacher outside of certified area

2022-23				2021-22				2020-21				2019-20			
Certification Areas	Total Number of Courses Reported Statewide	Total Number of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide	Percentage of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide	Certification Areas	Total Number of Courses Reported Statewide	Total Number of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide	Percentage of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide	Certification Areas	Total Number of Courses Reported Statewide	Total Number of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide	Percentage of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide	Certification Areas	Total Number of Courses Reported Statewide	Total Number of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide	Percentage of Courses Taught by Teachers Not Certified in Appropriate Field Reported Statewide
ESOL	3,260	660	20.25%	ESOL	3,194	603	18.88%	Reading	7,548	1,374	18.20%	ESOL	3,441	655	19.04%
Health	699	141	20.17%	Health	692	120	17.34%	Foreign Languages-Other	1,386	245	17.68%	Reading	7,775	1,445	18.59%
English	32,957	5,932	18.00%	English	33,883	5,318	15.70%	ESE	67,743	11,487	16.96%	Gifted	942	160	16.99%
Science-Physical	3,236	544	16.81%	Science-Physical	3,411	527	15.45%	ESOL	3,130	527	16.84%	Health	654	94	14.37%
Gifted	890	146	16.40%	Reading	10,192	1,571	15.41%	Health	676	111	16.42%	Science-Physical	3,571	487	13.64%
Total Areas	570,833	59,134	10.36%	Total Areas	587,607	55,405	9.43%	Total Areas	591,461	59,117	10.00%	Total Areas	583,843	45,975	7.87%

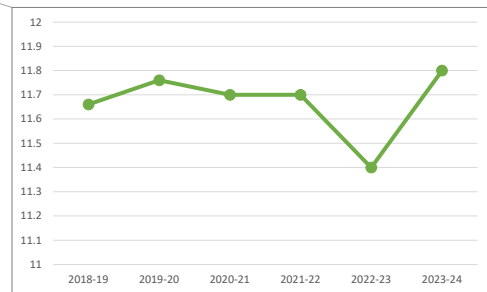
- ESOL and Health were in the top 5 certification area courses taught by a teacher outside of the certified area from 2019-20 through 2022-23

6

## Public school teacher average years' experience



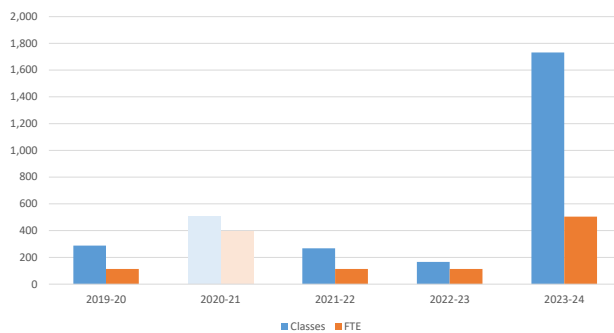
- The average number of years experience reported in public school teacher salary data has remained relatively constant in recent years, hovering within the 11<sup>th</sup> year of teaching



7

## Classes and FTE Over Class Size Cap

Statewide



- The number of FTE in classes exceeding the class size cap has remained relatively constant, however, 2023-24 saw a significant rise in both classes and FTE exceeding the cap
- This increase is following the removal of financial penalty for noncompliance (Chapter 2023-104, Laws of Florida)

	2019-20	2020-21	2021-22	2022-23	2023-24
Classes	288	509	268	166	1,732
FTE	113.8	395.13	113.55	113.06	504.95

8

## Measuring statewide teacher employment level at the occupational level

- In recent years there is consistent growth in the number of teaching certifications held in the state of Florida.
- Non-public education settings do not have to require a teacher to be certified.
- In public education settings:
  - When measured as a “teaching outside of certified area” rate, there appear to be consistent subject areas over time that are taught by teachers not certified in that area.\*
  - When measured as a “vacancy” rate, there does not appear to be a critical shortage in a) any subject area relative to certifications in that subject area or b) total public school teachers.
  - When measured as growth in classes or FTE over the Class Size Average Cap, there were more classes and FTE over the cap in 2023-24 relative to prior years, however this is difficult to interpret as the increase occurred following policy to remove the financial penalty.

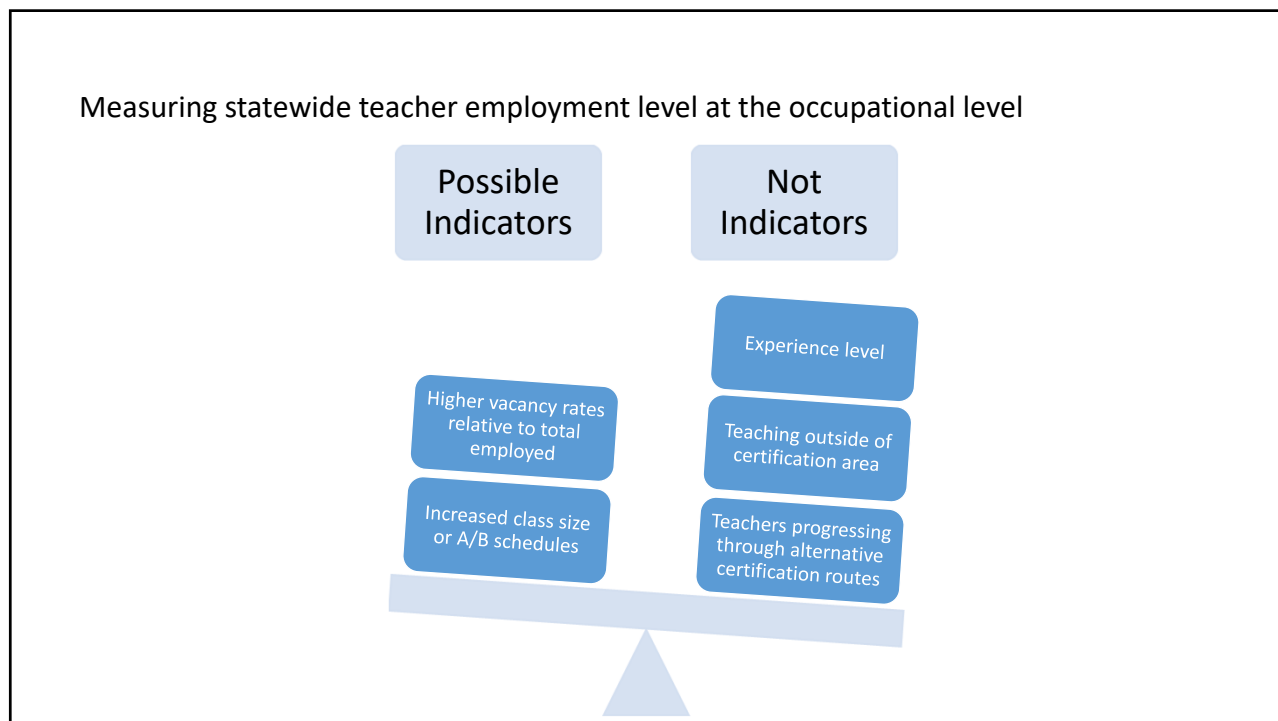
\*1012.42, F.S. Teacher teaching out-of-field.—(1) ASSISTANCE.—Each district school board shall adopt and implement a plan to assist any teacher teaching out-of-field, and priority consideration in professional development activities shall be given to a teacher who is teaching out-of-field. [The district school board shall require that the teacher participate in a certification or staff development program designed to provide the teacher with the competencies required for the assigned duties.](#) The board-approved assistance plan must include duties of administrative personnel and other instructional personnel to provide students with instructional services.

## LMEC 15 PreK-12 Teacher Occupations

Preschool Teachers, Except Special Education  
Kindergarten Teachers, Except Special Education  
Elementary School Teachers, Except Special Education  
Middle School Teachers, Except Special and Career/Technical Education  
Career/Technical Education Teachers, Middle School  
Secondary School Teachers, Except Special and Career/Technical Education  
Career/Technical Education Teachers, Secondary School  
Special Education Teachers, Preschool  
Special Education Teachers, Kindergarten and Elementary School  
Special Education Teachers, Middle School  
Special Education Teachers, Secondary School  
Special Education Teachers, All Other  
Self-Enrichment Teachers  
Substitute Teachers, Short-Term  
Tutors and Teachers and Instructors, All Other

Florida's 69 Certification Subject Areas		
<b>Elementary Level Coverages</b>		
Elementary Education (grades K-6)		
Preschool/Primary Education (age 3 through grade 3)		
Preschool Education (birth through age 4)		
<b>Middle Level Coverages (grades 5-9)</b>		
Middle Grades English (grades 5-9)		
Middle Grades General Science (grades 5-9)		
Middle Grades Mathematics (grades 5-9)		
Middle Grades Social Science (grades 5-9)		
<b>Secondary Level Coverages (grades 6-12)</b>		
Drama (grades 6-12)		
English (grades 6-12)		
Mathematics (grades 6-12)		
Social Science (broad field; grades 6-12)		
<b>Science Areas</b>		
Biology (grades 6-12)		
Chemistry (grades 6-12)		
Earth-Space Science (grades 6-12)		
Physics (grades 6-12)		
<b>Elementary and Secondary Coverages (grades K-12)</b>		
Art (grades K-12)		
Athletic Coaching (grades K-12)		
Computer Science (grades K-12)		
Dance (grades K-12)		
English for Speakers of Other Languages (ESOL; grades K-12)		
Health (grades K-12)		
Humanities (grades K-12)		
Music (grades K-12)		
Physical Education (grades K-12)		
Reading (grades K-12)		
<b>World Language Areas</b>		
Arabic (grades K-12)		
Chinese (grades K-12)		
Farsi (grades K-12)		
French (grades K-12)		
German (grades K-12)		
Greek (grades K-12)		
Haitian Creole (grades K-12)		
Hebrew (grades K-12)		
Hindi (grades K-12)		
Italian (grades K-12)		
Japanese (grades K-12)		
Latin (grades K-12)		
Portuguese (grades K-12)		
Russian (grades K-12)		
Spanish (grades K-12)		
Turkish (grades K-12)		
<b>Exceptional Student Education Areas</b>		
Exceptional Student Education (grades K-12)		
Deaf or Hard of Hearing (grades K-12)		
Speech-Language Impaired (grades K-12)		
Visually Impaired (grades K-12)		
<b>Professional Service Areas (grades PK-12)</b>		
Educational Media Specialist (grades PK-12)		
School Counseling (grades PK-12)		
School Psychology (grades PK-12)		
School Social Work (grades PK-12)		
<b>Administrative Coverages</b>		
Administration of Adult Education (adult)		
Educational Leadership		
School Principal		
Local Director of Career and Technical Education (career and technical)		
<b>Academic Endorsements</b>		
American Sign Language		
Athletic Coaching		
Autism Spectrum Disorders		
Driver Education		
English for Speakers of Other Languages (ESOL)		
Gifted		
Orientation and Mobility		
Prekindergarten Disabilities		
Reading		
Severe or Profound Disabilities		
<b>Degreed Career and Technical Coverages</b>		
Agriculture (grades 6-12)		
Business Education (grades 6-12)		
Engineering and Technology Education (grades 6-12)		
Family and Consumer Science (grades 6-12)		
Marketing (grades 6-12)		
<b>Nondegreed Career and Technical Coverages</b>		
Career & Technical Education (CTE) Programs and Curriculum Frameworks		

11



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