Green Construction Career Ladder

 Prepared by AdvanceCT and Thomas P. Miller & Associates
To increase job opportunities in Connecticut’s green technology sector, lower energy costs, improve energy efficiency and promote sustainability, the Office of Workforce Competitiveness, in consultation with other agencies, created a green jobs career ladder. This ladder is designed to link green jobs employers with technical education and career schools and institutions of higher education to foster coordination and grow the workforce in the sector.

The green jobs ladder includes components such as the scope of the industry and various occupations included, the skills and knowledge needed to succeed in those occupations, and the professional opportunities available at the entry, mid-career and advanced levels, along with the current salary ranges for each. To maintain this ladder as a comprehensive and useful resource for the green technology industry and its educational partners, it will be updated periodically as needed.
Green Construction Career Ladder

Entry Level
High School Diploma and On-the-Job Training

Mid-Career
Bachelor’s Degree/ 5 Years or Less of Training

Advanced
Doctoral or professional degree/ 5+ Years of Training

Operating Engineers and Other Construction Equipment Operators

Construction Laborers

Electricians

Plumbers, Pipefitters, and Steamfitters

Heating, Air Conditioning, and Refrigeration Mechanics and Installers

Civil Engineers

Engineers, All Other

Electrical Engineers

The lines within this career ladder provide potential pathways that workers can follow within this industry ecosystem. The colors are simply to differentiate one pathway option from the other.
Civil Engineers Occupational Profile

**MEDIAN SALARY & WAGES**
$45.02/Hour

**TOTAL JOBS FOR 2024**
3,713

**COMMON JOB TITLES**
- Structural Engineers
- Civil Engineers
- Bridge Engineers
- Geotechnical Engineers

**COMMON KNOWLEDGE COMPETENCIES**
- Engineering and Technology
- Building and Construction
- Mathematics
- Design

**REQUESTED EDUCATION**
- High School or Less
- Post-Secondary Certificate
- Bachelor's

**TOP CERTIFICATIONS REQUESTED**
- Licensed Engineer
- Professional Engineer
- Master of Business Administration
- Traffic Control Supervisor

**TOP SKILLS REQUESTED**
- Critical Thinking
- Active Listening
- Speaking
- Mathematics
- Complex Problem Solving
- Operation Analysis
- Systems Analysis
- Time Management
- Science
- Reading Comprehension

**SIMILAR INDUSTRIES**
- Agriculture & Forestry
- Energy Efficiency & Storage
- Environmental Protection & Waste Reduction
- Government & Regulatory Administration
- Transportation
- Green Construction
- Research, Design, Consulting, & Supportive Services
- Manufacturing
- Renewable Energy Generation

Indicates an especially close similarity
### Construction Laborers Occupational Profile

**Median Salary & Wages**
- $23.89/Hour

**Common Job Titles**
- Construction Laborers
- General Laborers
- Construction Workers
- Concrete Laborers

**Total Jobs for 2024**
- 8,369

**Common Knowledge Competencies**
- Building and Construction
- Mechanical
- Administration and Management
- Public Safety & Security

**Requested Education**
- High School or Less
- Post-Secondary Certificate

**Top Certifications Requested**
- Commercial Driver’s License
- HAZWOPER Certification
- Certified Information Privacy Professional
- Certified Medical Office Manager

**Top Skills Requested**
- Active Listening
- Reading Comprehension
- Speaking
- Social Perceptiveness
- Coordination
- Operation Monitoring
- Critical Thinking
- Complex Problem Solving
- Operation and Control
- Monitoring

**Similar Industries**
- Agriculture & Forestry
- Energy Efficiency & Storage
- Environmental Protection & Waste Reduction
- Government & Regulatory Administration
- Transportation
- Green Construction
- Research, Design, Consulting, & Supportive Services
- Manufacturing
- Renewable Energy Generation

*State of Connecticut Department of Labor, Office of Workforce Competitiveness, Spring 2020*
Electrical Engineers Occupational Profile

MEDIAN SALARY & WAGES
$47.26/Hour

TOTAL JOBS FOR 2024
2,890

COMMON JOB TITLES
- Senior Electrical Engineers
- Design Engineers
- Systems Engineers
- Project Engineers

REQUESTED EDUCATION
- High School or Less
- Post-Secondary Certificate
- Bachelor's

COMMON KNOWLEDGE COMPETENCIES
- Engineering and Technology
- Computer and Electronics
- Design
- Mathematics

TOP CERTIFICATIONS REQUESTED
- Professional Engineer
- Licensed Professional Engineer
- Systems Operator Certification
- Master of Business Administration

TOP SKILLS REQUESTED
- Reading Comprehension
- Active Listening
- Writing
- Critical Thinking
- Complex Problem Solving
- Speaking
- Active Learning
- Monitoring
- Mathematics
- Operations Analysis

SIMILAR INDUSTRIES
- Agriculture & Forestry
- Energy Efficiency & Storage
- Environmental Protection & Waste Reduction
- Government & Regulatory Administration
- Transportation
- Green Construction
- Research, Design, Consulting, & Supportive Services
- Manufacturing
- Renewable Energy Generation

State of Connecticut Department of Labor, Office of Workforce Competitiveness, Spring 2020
# Electricians Occupational Profile

**MEDIAN SALARY & WAGES**

$30.67/ Hour

**COMMON JOB TITLES**

- Electricians
- Journeyman Electricians
- Electrician Installers
- Electrical Apprentices

**REQUESTED EDUCATION**

- High School or Less
- Post-Secondary Certificate

**TOTAL JOBS FOR 2024**

7,599

**COMMON KNOWLEDGE COMPETENCIES**

- Building and Construction
- Mechanical
- Mathematics
- English Language

**TOP CERTIFICATIONS REQUESTED**

- Commercial Driver’s License
- NABCEP Certified Energy Practitioner
- Residential Electronics Systems Integrator
- Certified First Responder

**TOP SKILLS REQUESTED**

- Troubleshooting
- Repairing
- Active Listening
- Critical Thinking
- Judgement and Decision Making
- Installation
- Speaking
- Active Learning
- Monitoring
- Instructing

**SIMILAR INDUSTRIES**

- Agriculture & Forestry
- Energy Efficiency & Storage
- Environmental Protection & Waste Reduction
- Government & Regulatory Administration
- Transportation
- Green Construction
- Research, Design, Consulting, & Supportive Services
- Manufacturing
- Renewable Energy Generation

Indicates an especially close similarity
# Engineers, All Other Occupational Profile

## MEDIAN SALARY & WAGES

$48.19/Hour

## COMMON JOB TITLES

- Manufacturing Engineers
- Energy Engineers
- Design Engineers
- Energy Consultants

## REQUESTED EDUCATION

<table>
<thead>
<tr>
<th>Degree Level</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School or Less</td>
<td>Post-Secondary Certificate</td>
</tr>
<tr>
<td>Bachelor's</td>
<td></td>
</tr>
</tbody>
</table>

## TOP CERTIFICATIONS REQUESTED

- Certified Energy Manager
- Master of Business Administration
- LEED Accredited Professional
- Six Sigma Green Belt Certification

## COMMON KNOWLEDGE COMPETENCIES

- Engineering and Technology
- Mathematics
- Design
- Computers and Electronics

## TOP SKILLS REQUESTED

- Reading Comprehension
- Critical Thinking
- Active Listening
- Writing
- Complex Problem Solving
- Speaking
- Judgement and Decision Making
- Mathematics
- Active Learning
- Monitoring

## TOTAL JOBS FOR 2024

1,067

## SIMILAR INDUSTRIES

- Agriculture & Forestry
- Energy Efficiency & Storage
- Environmental Protection & Waste Reduction
- Government & Regulatory Administration
- Transportation
- Green Construction
- Research, Design, Consulting, & Supportive Services
- Manufacturing
- Renewable Energy Generation

*Indicates an especially close similarity

State of Connecticut Department of Labor, Office of Workforce Competitiveness, Spring 2020
## Heating, Air Conditioning, and Refrigeration Mechanics and Installers Occupational Profile

<table>
<thead>
<tr>
<th>MEDIAN SALARY &amp; WAGES</th>
<th>COMMON JOB TITLES</th>
<th>REQUESTED EDUCATION</th>
<th>TOP SKILLS REQUESTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30.86/ Hour</td>
<td>HVAC Refrigeration Technicians</td>
<td>High School or Less</td>
<td>Troubleshooting</td>
</tr>
<tr>
<td></td>
<td>HVAC Service Technicians</td>
<td>Post-Secondary Certificate</td>
<td>Equipment Maintenance</td>
</tr>
<tr>
<td></td>
<td>HVAC Control Technicians</td>
<td>Bachelor's</td>
<td>Repairing</td>
</tr>
<tr>
<td></td>
<td>Maintenance Managers</td>
<td></td>
<td>Operations Monitoring</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMMON KNOWLEDGE COMPETENCIES</th>
<th>TOP CERTIFICATIONS REQUESTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical</td>
<td>HVAC</td>
</tr>
<tr>
<td>Customer and Personal Service</td>
<td>EPA 60B Technician</td>
</tr>
<tr>
<td>Building and Construction</td>
<td>EPA Universal</td>
</tr>
<tr>
<td>Computers and Electronics</td>
<td>CFC Refrigeration</td>
</tr>
</tbody>
</table>

### MEDIAN SALARY & WAGES
- $30.86/ Hour

### TOTAL JOBS FOR 2024
- 4,467

### COMMON KNOWLEDGE COMPETENCIES
- Mechanical
- Customer and Personal Service
- Building and Construction
- Computers and Electronics

### TOP CERTIFICATIONS REQUESTED
- HVAC
- EPA 60B Technician
- EPA Universal
- CFC Refrigeration

### TOP SKILLS REQUESTED
- Troubleshooting
- Equipment Maintenance
- Repairing
- Operations Monitoring
- Installation
- Quality Control Analysis
- Critical Thinking
- Active Listening
- Operation and Control
- Equipment Selection

### SIMILAR INDUSTRIES
- Agriculture & Forestry
- Energy Efficiency & Storage
- Environmental Protection & Waste Reduction
- Government & Regulatory Administration
- Transportation
- Green Construction
- Research, Design, Consulting, & Supportive Services
- Manufacturing
- Renewable Energy Generation

State of Connecticut Department of Labor, Office of Workforce Competitiveness, Spring 2020
Operating Engineers and Other Construction Equipment Occupational Profile

<table>
<thead>
<tr>
<th>MEDIAN SALARY &amp; WAGES</th>
<th>COMMON JOB TITLES</th>
<th>REQUESTED EDUCATION</th>
<th>TOP SKILLS REQUESTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>$34.16/Hour</td>
<td>Equipment Operators</td>
<td>High School or Less</td>
<td>Operation and Control</td>
</tr>
<tr>
<td></td>
<td>Tutors</td>
<td>Post-Secondary Certificate</td>
<td>Monitoring</td>
</tr>
<tr>
<td></td>
<td>Equipment Technicians</td>
<td></td>
<td>Coordination</td>
</tr>
<tr>
<td></td>
<td>Plant Operators</td>
<td></td>
<td>Equipment Maintenance</td>
</tr>
<tr>
<td><strong>TOTAL JOBS FOR 2024</strong></td>
<td><strong>3,172</strong></td>
<td></td>
<td>Troubleshooting</td>
</tr>
<tr>
<td></td>
<td><strong>COMMON KNOWLEDGE COMPETENCIES</strong></td>
<td></td>
<td>Critical Thinking</td>
</tr>
<tr>
<td></td>
<td>Building and Construction</td>
<td></td>
<td>Active Learning</td>
</tr>
<tr>
<td></td>
<td>Mechanical</td>
<td></td>
<td>Repairing</td>
</tr>
<tr>
<td></td>
<td>Administration and Management</td>
<td></td>
<td>Quality Control Analysis</td>
</tr>
<tr>
<td></td>
<td>Public Safety and Security</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOP CERTIFICATIONS REQUESTED</strong></td>
<td><strong>Commercial Driver’s License</strong></td>
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</tr>
</tbody>
</table>

SIMILAR INDUSTRIES
- Agriculture & Forestry
- Energy Efficiency & Storage
- Environmental Protection & Waste Reduction
- Government & Regulatory Administration
- Transportation
- Green Construction
- Research, Design, Consulting, & Supportive Services
- Manufacturing
- Renewable Energy Generation

State of Connecticut Department of Labor, Office of Workforce Competitiveness, Spring 2020
# Plumbers, Pipefitters, and Steamfitters Occupational Profile

<table>
<thead>
<tr>
<th>MEDIAN SALARY &amp; WAGES</th>
<th>COMMON JOB TITLES</th>
<th>REQUESTED EDUCATION</th>
<th>TOP SKILLS REQUESTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30.67/Hour</td>
<td>Plumbers</td>
<td>High School or Less</td>
<td>Critical Thinking</td>
</tr>
<tr>
<td></td>
<td>Buyers</td>
<td></td>
<td>Active Listening</td>
</tr>
<tr>
<td></td>
<td>Pipe Fitters</td>
<td></td>
<td>Judgment and Decision Making</td>
</tr>
<tr>
<td></td>
<td>Plumbing Technicians</td>
<td></td>
<td>Speaking</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Reading Comprehension</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Complex Problem Solving</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Operation Monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quality Control Analysis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Time Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Active Learning</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TOTAL JOBS FOR 2024</th>
<th>COMMON KNOWLEDGE COMPETENCIES</th>
<th>TOP CERTIFICATIONS REQUESTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,409</td>
<td>Mechanical</td>
<td>Commercial Driver’s License</td>
</tr>
<tr>
<td></td>
<td>Building and Construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SIMILAR INDUSTRIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture &amp; Forestry</td>
</tr>
<tr>
<td>Environmental Protection &amp; Waste Reduction</td>
</tr>
<tr>
<td>Transportation</td>
</tr>
<tr>
<td>Research, Design, Consulting, &amp; Supportive Services</td>
</tr>
<tr>
<td>Manufacturing</td>
</tr>
</tbody>
</table>

Indicates an especially close similarity
# Education & Training Institutions Offerings

<table>
<thead>
<tr>
<th>Civil Engineers</th>
<th>Electrical Engineers</th>
<th>Electricians</th>
<th>Energy Engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Community College</td>
<td>Advanced Electrical Services, Inc.</td>
<td>Able Electric Company</td>
<td>Capital Community College</td>
</tr>
<tr>
<td>Central Connecticut State University</td>
<td>Dominion Nuclear Connecticut Inc- Apprenticeship</td>
<td>ADTECH Systems Inc</td>
<td>Manufacturing Alliance Service Corporation, Inc.</td>
</tr>
<tr>
<td>Quinnipiac University</td>
<td>Dubaldo Electric Co</td>
<td>Alarm Security Protection Co., Inc.</td>
<td>Three Rivers Community College</td>
</tr>
<tr>
<td>United States Coast Guard Academy</td>
<td>Eversource (Convex Operating Group)- OJT</td>
<td>All Current Electric, LLC</td>
<td>Trinity College</td>
</tr>
<tr>
<td>University of Connecticut, Storrs Campus</td>
<td>Fairfield University</td>
<td>CE Electrical Contractors Inc.</td>
<td>University of Connecticut, Storrs Campus</td>
</tr>
<tr>
<td>University of Hartford</td>
<td>Griffin Electrical Contractors, Inc.</td>
<td>Champion Electric</td>
<td>University of Hartford</td>
</tr>
<tr>
<td>University of New Haven</td>
<td>Haskins Electric, LLC</td>
<td>Construction Education Center, Inc.</td>
<td>University of New Haven</td>
</tr>
<tr>
<td></td>
<td>National Electrical Contractors Associates NECA &amp; Local 90 JATC</td>
<td>Donnelly Security</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sacred Heart University</td>
<td>Equipment Unlimited</td>
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</tr>
<tr>
<td></td>
<td>Trinity College</td>
<td>General Dynamics Electric Boat Division</td>
<td></td>
</tr>
<tr>
<td></td>
<td>United States Coast Guard Academy</td>
<td>Globe Electric, LLC (Apprenticeship)</td>
<td></td>
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<tr>
<td></td>
<td>University of Bridgeport</td>
<td>IBEW Local 488 JATC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of Connecticut, Storrs Campus</td>
<td>Integrated Security Solutions, LLC</td>
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</tr>
<tr>
<td></td>
<td>University of Hartford</td>
<td>Jamco Electric</td>
<td></td>
</tr>
<tr>
<td></td>
<td>University of New Haven</td>
<td>Lincoln Technical Institute</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yale University</td>
<td>Lincoln Technical Institute</td>
<td>(Lincoln Culinary Institute)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New England Technical Institute</td>
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<tr>
<td></td>
<td></td>
<td>Porter and Chester Institute</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Porter and Chester Institute of Hamden</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>State-Wide Electric, Inc.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>The NY-Conn Corporation</td>
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<tr>
<td></td>
<td></td>
<td>Tranmer Electric, LLC.</td>
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</tbody>
</table>
## Education & Training Institutions Offerings

<table>
<thead>
<tr>
<th>Heating &amp; Air Conditioning Mechanics &amp; Installers</th>
<th>Pipe Fitters &amp; Steamfitters</th>
<th>Plumbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA Refrigeration</td>
<td>Industrial Management &amp; Training Institute</td>
<td>Construction Education Center, Inc.</td>
</tr>
<tr>
<td>AGS HVAC Services</td>
<td>General Dynamics Electric Boat Division</td>
<td>Cordone &amp; Tonucci Plumbing, Heating and Maintenance Contractors, Inc.</td>
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<tr>
<td>Air Temp Mechanical Services</td>
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<td>CT Plumbers &amp; Pipe Fitters UA LU 777JACT</td>
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<tr>
<td>Arbor Energy</td>
<td></td>
<td>Hart Mechanical Inc.</td>
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<tr>
<td>B T Lindsay &amp; CO Inc.</td>
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<td>J.H. Barlow Pump and Supply, Inc.</td>
</tr>
<tr>
<td>Bristol Technical Education Center</td>
<td></td>
<td>Macri Associates Inc.</td>
</tr>
<tr>
<td>Construction Education Center, Inc.</td>
<td></td>
<td>New England Mechanical Services, INC.</td>
</tr>
<tr>
<td>Cordone &amp; Tonucci Plumbing, Heating and Maintenance Contractors, Inc.</td>
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<td>Otto Company AKA The Otto Company</td>
</tr>
<tr>
<td>CT Plumbers &amp; Pipe Fitters UA LU 777JACT</td>
<td></td>
<td>Porter and Chester Institute</td>
</tr>
<tr>
<td>Devine Bros., Inc</td>
<td></td>
<td>Porter and Chester Institute of Hamden</td>
</tr>
<tr>
<td>Industrial Management &amp; Training Institute</td>
<td></td>
<td>R.M. Macy Plumbing and Heating LLC</td>
</tr>
<tr>
<td>Lennox National Account Services</td>
<td></td>
<td></td>
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<tr>
<td>Lincoln Technical Institute</td>
<td></td>
<td></td>
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<tr>
<td>New England Mechanical Services, INC.</td>
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<tr>
<td>New England Technical Institute</td>
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<td>Nutmeg Mechanical Services, Inc.</td>
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</tr>
<tr>
<td>Otto Company AKA The Otto Company</td>
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<tr>
<td>Porter and Chester Institute</td>
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<tr>
<td>Porter and Chester Institute of Hamden</td>
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<tr>
<td>R.A. Levine Company</td>
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<td>Thomaston Comfort Control, Inc.</td>
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<tr>
<td>Wilcox Energy</td>
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</tbody>
</table>


Glossary

ABILITIES – the proficiency, skills, or talent within a particular area.

CAREER PATHWAY – a career pathway means a combination of relevant, rigorous and high-quality education, training, and supportive services that aligns both vertically and horizontally across Secondary Education, Adult Basic Education, Workforce Training and Development, Career and Technical Education, and Postsecondary Education systems, pathways, and programs.

CERTIFICATION – third party accrediting or authorizing agency or person who assess, verifies, and provides an official documentation that attests a level of achievement.

COMPETENCIES – an individual’s ability to do a job properly through a set of behaviors.

INDUSTRY-ALIGNED CREDENTIAL – credentials whose standards are aligned to industry-recognized standards.

INDUSTRY-ENDORSED CREDENTIAL – credentials whose standards are aligned to and endorsed by industry.

INDUSTRY-RECOGNIZED CREDENTIAL – an industry-recognized credential is one that either is developed and offered by, or endorsed by a nationally-recognized industry association or organization representing a sizeable portion of the industry sector, or a credential that is sought or accepted by companies within the industry sector for purposes of hiring or recruitment which may include credentials from vendors of certain products.

KNOWLEDGE – the skills and information acquired through education or experience.

MEDIAN HOURLY EARNINGS – hourly earnings for the occupation reported at the 50th percentile.

REQUESTED EDUCATION – the highest level of education for workers within the given occupational category. Please note these are not the level of education of new incoming workers but of workers currently employed within these positions.

SKILLS – the ability or expertise to do something well.

TOTAL JOBS – estimated number of jobs in the given year, taken as average over a period of 12-months. This value includes both full- and part-time jobs.