Industrial Based Certifications

Steven Lehr
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EXECUTIVE OVERVIEW

- Shortage of trained skilled tradesmen in the USA and growing.
- Observation in multiple states reveals electrical trades training is under-developed.
- Career Technology Education (CTE) is key to addressing the shortage.
- Secondary schools seek CTC’s offering credit and pathways to degrees/certifications.
- Apprenticeships are experiencing increased demand and seeking qualified candidates.
- Craft salaries continue to grow as demand increases.
- Industry seeks potential employees with hands on training and experience.
- Great training programs improve personal, business and community economic vitality.
- Greenlee provides a complete electrical training solution aligned with ETA.
- Greenlee labs are the model for meeting comprehensive electrical education needs.
- New Ridge synergies offers additional opportunities to support training programs.
- Standardized modules creates uniformity and repeatability across the system. Through NC3, Greenlee provides stackable, transportable and recognized certifications.
- Greenlee is a platinum training partner committed to skilled trades development.
- Greenlee offers training centers and students and easy way to obtain hand tools on-line.

WHO IS GREENLEE

- Over 150 years of industry experience
  - 2,000+ employees globally
- Recognized brand amongst trade professionals
  - Actively creating the next generation of trade tools
- A comprehensive product line for:
  - Electrical/Utility – Power Distribution to Residential
  - Mechanical – HVAC, Plumbing, Irrigation
- Part of Emerson Professional Tool Group – RIDGID, Greenlee, Sherman & Riley, Klauek, and HDE
  - Sister companies also have extensive training experience and talent to leverage
- 36+ Greenlee labs in 17 states across the country in existence today
- Support nearly all of the 285 apprenticeship programs in the nation
Combination Gives Emerson the Broadest Portfolio to Serve Mechanical, Electrical & Plumbing Education Programs

<table>
<thead>
<tr>
<th>Ridge Tool</th>
<th>Textron Tools &amp; Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipe &amp; Tube Tools</td>
<td>Crimping &amp; Lugs</td>
</tr>
<tr>
<td>Underground Technologies</td>
<td>Electrical Tools</td>
</tr>
<tr>
<td>Pressing &amp; Crimping Connection</td>
<td>Utility</td>
</tr>
<tr>
<td>Other</td>
<td>Communications</td>
</tr>
</tbody>
</table>

- Threading
- Drain Cleaning
- Pressing
- Crimping
- Unic
- Gen. Purpose
- Wrenches
- Inspection
- Locating
- Pipe Fab.
- Locating
- Crimp/Press
- Lugs/Assembly
- Hole making
- Test & Measurement
- Cable Termination
- Bending
- Transmission
- M.E.P Technical Training
- Electrical

Core Segment Served: Mechanical & Plumbing
Construction Jobs Pay

2018 CONSTRUCTION CRAFT SALARY SURVEY RESULTS

<table>
<thead>
<tr>
<th>Craft</th>
<th>2018 Salary</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Electrician</td>
<td>$61,139</td>
<td>Up 6%*</td>
</tr>
<tr>
<td>Industrial Electrician</td>
<td>$67,269</td>
<td>Up 15%*</td>
</tr>
<tr>
<td>Power Generation Technician</td>
<td>$63,024</td>
<td></td>
</tr>
<tr>
<td>Power Line Worker</td>
<td>$68,262</td>
<td></td>
</tr>
</tbody>
</table>

* Figures above represent average annual salaries for individual craft areas, not including overtime, per diem or other incentives.

Published by NCCER | December 2018

* Compared to 2016 NCCER survey results.

Wages/Employment Statistics - Electrician

Wages and employment for Electricians is strong across the nation

www.bls.gov
Demand for Electricians exceeds current national training capacity

Industry Based Credentials

Industry Based Certification (IBC). A credential, usually issued by an industry or industry group, that verifies that an individual has met the skill standards established by that industry or industry group, as minimal requirements to successfully enter the workforce and compete in that particular occupational area.

IBC’s can be used for multiple purposes –
- Introduction to an industry in secondary school setting
- Exposing post-secondary students to specific skills and knowledge based on industry demands
- Providing essential skills and knowledge for workforce development programs
- Offering continuing education to existing industry professionals

Examples of organizations issuing IBC’s include:
- NC3 – National Coalition of Certification Centers
- NCCER – National Center for Construction Education and Research
- BICS1 – Building Industry Consulting Service International
- ETAI- Electronics Technicians Association International

Literally hundreds of approved credentials in all areas and specialties

https://www.careeronestop.org
INDUSTRIAL BASED CERTIFICATIONS

Where Education & Industry Meet.

Non-profit network of education providers and corporations committed to training the next-generation of skilled workers to meet industry demands.

INDUSTRIAL BASED CERTIFICATIONS

Foundational Certifications for Electrical Related Trades Programs

**CORE SKILL FOR SKILLED TRADES IN A VARIETY OF OCCUPATIONS**

**WIRE PATHWAYS**

**BENDING**
Hand, Electric, Hydraulic, PVC, Threading

**FISHING & PULLING**
Hand & Power Fishing, Power Pulling

**CUTTING & TERMINATION**
Battery powered Cutters & Crimpers, Hydraulic ACSR cutters

**TEST & MEASURE**
Electrical Based T&M

**Ridge Product Line**
Future Ridge certifications
Certifications

Currently there are 13 student certifications in seven competency categories

<table>
<thead>
<tr>
<th>Certification</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Bending</td>
<td>12</td>
<td>Hand Bending and Mechanical Bending of Conduit</td>
</tr>
<tr>
<td>Advanced Bending</td>
<td>8</td>
<td>Electric, Hydraulic, PVC Bending and Pipe Cutting</td>
</tr>
<tr>
<td>PTA Pathways</td>
<td>4</td>
<td>Locating and drilling holes using drill bits and hole saws</td>
</tr>
<tr>
<td>Knockout Pathways</td>
<td>4</td>
<td>Use various punch sets to knock out holes properly</td>
</tr>
<tr>
<td>Service Termination</td>
<td>5</td>
<td>Large gauge wire cutting, stripping and termination</td>
</tr>
<tr>
<td>Branch Termination</td>
<td>4</td>
<td>Small gauge wire cutting, stripping and termination</td>
</tr>
<tr>
<td>VDV LAN*</td>
<td>12</td>
<td>Cutting, stripping, testing of low voltage wire and coax</td>
</tr>
<tr>
<td>Fiber Prep*</td>
<td>8</td>
<td>Cleaving and polishing of fiber optic cable</td>
</tr>
<tr>
<td>Fiber Splicing*</td>
<td>5</td>
<td>Proper fusion splicing of fiber optic cable</td>
</tr>
<tr>
<td>Fiber Testing*</td>
<td>3</td>
<td>Fiber testing using an Optical Time Domain Reflectometer</td>
</tr>
<tr>
<td>Test &amp; Measure</td>
<td>4</td>
<td>Motor phasing &amp; sequencing; hi-pot testing</td>
</tr>
<tr>
<td>Cable Fishing</td>
<td>4</td>
<td>Various methods of fishing wires and cables</td>
</tr>
<tr>
<td>Cable Pulling</td>
<td>8</td>
<td>Manual and assisted pulling of cable</td>
</tr>
</tbody>
</table>

*VDV and Fiber are discontinued but still supported by Greenlee in schools with certifications in place.

Training Modules

<table>
<thead>
<tr>
<th>Modules</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Modules</td>
<td>Hours 81</td>
</tr>
<tr>
<td>Basic</td>
<td>Hand &amp; Mechanical Bending                                                   Hours 12</td>
</tr>
<tr>
<td>Advanced</td>
<td>Electric &amp; Hydraulic PVC &amp; Pipe Cutting and Threading                       Hours 8</td>
</tr>
<tr>
<td>PTA</td>
<td>Cross section of rotary hole making                                        Hours 4</td>
</tr>
<tr>
<td>Knockouts</td>
<td>Manual, hydraulic and battery tools                                         Cost Included Hours 4</td>
</tr>
<tr>
<td>Service</td>
<td>Cutting &amp; crimping of service size cable                                    Hours 5</td>
</tr>
<tr>
<td>Test &amp; Measure</td>
<td>Motor Phasing and Sequencing                                                Hours 4</td>
</tr>
<tr>
<td>Fishing &amp; Pulling</td>
<td>Wire and harness fishing in tracks and conduit                               Hours 8</td>
</tr>
<tr>
<td>Secondary Bending</td>
<td>Designed for High School programs. Basic bending equipment and focus on math Hours 8</td>
</tr>
<tr>
<td>Future Electrical</td>
<td>Consumable kits                                                             New products</td>
</tr>
<tr>
<td>Future Comm</td>
<td>Based on new products developed</td>
</tr>
<tr>
<td>Future Utility</td>
<td>Underground</td>
</tr>
<tr>
<td>Future Mech</td>
<td>HVAC</td>
</tr>
<tr>
<td>Future Trades</td>
<td>As the education market demands and needs are identified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COE</th>
<th>Standard Lab Setup, Benches &amp; vices                                          Hours N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM</td>
<td>Designed for High School programs. Basic bending equipment and focus on math Hours 8</td>
</tr>
</tbody>
</table>
**Occupations**

- IBC’s are core to:
  - Linemen
  - Residential
  - Inside
  - Technician

**Skilled Career Path**

- Pre-certification
- Apprenticeships
- Secondary CTE Students
- Certification
- Workforce - OJT
- Career in Skilled Trades
- CEU’s
- Greenlee Certifications part of every channel

- Certification
- Post Secondary - degree
Training Center of Excellence

EMERSON  GREENLEE

Typical GreenApple Lab installed
SUMMARY

Industrial Based Certifications support:

- training the next generation of skilled trades.
- partnering with the Workforce/Economic/Education teams to grow the skills necessary to attract and retain industries with high paying jobs.
- attracting high quality students with a world class training environment.
- Sharing industry knowledge, education resources and broad range of professional grade equipment.
- developing and equipping industry representative classrooms.
- equipping graduates with hands-on training at the start of their career.
- ergonomic tools that encourage an inclusive workforce.
- closing the skills gap by making electrical training relevant.
- a consistent standardized avenue for recognized required skill sets.
Real world training for real world jobs