ASSET MAPPING FOR MANUFACTURING EDUCATION PROGRAMS IN THE AUSTIN REGION

SEPTEMBER 19, 2018
OBJECTIVE

Help 10,000 residents who are living at or below 200% of poverty secure middle-skill jobs by 2021
Major Takeaways From The ARMA 2017 Central Texas Manufacturing Workforce Study

• 19,000 new workers needed in next 10 years for replacement and growth

• $16.94 average hourly wage for production workers

• 88% of employers surveyed indicated that recruiting qualified workers was a challenge

• Not enough relevant training programs / seats available in existing programs
## Occupations With Highest Reported Demand

<table>
<thead>
<tr>
<th>OCCUPATION TITLE</th>
<th>SOC CODE</th>
<th>AREA OF STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assemblers and Fabricators</td>
<td>51-2031 &amp; 51-2041</td>
<td>Mfg. Tech.</td>
</tr>
<tr>
<td>Electrical and Electronic Equipment Assemblers</td>
<td>51-2022</td>
<td>Electrical &amp; Electronics</td>
</tr>
<tr>
<td>Electrical and Electronics Engineering Technicians</td>
<td>17-3023</td>
<td>Electrical &amp; Electronics</td>
</tr>
<tr>
<td>Engineers (Manufacturing)</td>
<td>17-2199.04</td>
<td>Engineering</td>
</tr>
<tr>
<td>First-Line Supervisors of Production and Operating Workers</td>
<td>51-1011</td>
<td>Leadership</td>
</tr>
<tr>
<td>Inspectors, Testers, Sorters, Samplers, and Weighers</td>
<td>51-9061</td>
<td>Quality</td>
</tr>
<tr>
<td>Machinists</td>
<td>51-4041</td>
<td>Mfg. Tech.</td>
</tr>
<tr>
<td>Maintenance and Repair Workers, General</td>
<td>49-9071</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Sales Reps., Wholesale &amp; Manufacturing, Technical &amp; Scientific Products</td>
<td>41-4011</td>
<td>Sales</td>
</tr>
<tr>
<td>Semiconductor Processors</td>
<td>51-9141</td>
<td>Semiconductor</td>
</tr>
<tr>
<td>Software Developers, Applications</td>
<td>15-1132</td>
<td>Software</td>
</tr>
<tr>
<td>Welders, Cutters, Solderers, and Brazers</td>
<td>51-4121</td>
<td>Welding</td>
</tr>
</tbody>
</table>

The Standard Occupational Classification (SOC) system is utilized by the US government to classify occupations.
<table>
<thead>
<tr>
<th>Type of Skills</th>
<th>Organization</th>
<th>Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automation</td>
<td>International Society of Automation (ISA)</td>
<td>• Certified Control Systems Technician (CCST)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Certified Automation Professional (CAP)</td>
</tr>
<tr>
<td>Construction</td>
<td>National Center for Construction Education and Research (NCCER)</td>
<td>• Apply for certification</td>
</tr>
<tr>
<td>Cross-Cutting Technical Skills</td>
<td>Manufacturing Skill Standards Council (MSSC)</td>
<td>• Certified Production Technician (CPT)</td>
</tr>
<tr>
<td></td>
<td>Manufacturing Skills Institute (MSI)</td>
<td>• Manufacturing Technician 1 (MT1)</td>
</tr>
<tr>
<td>Die Casting</td>
<td>North American Die Casting Association (NADCA)</td>
<td>• Apply for certification</td>
</tr>
<tr>
<td>Fabrication</td>
<td>Fabricators and Manufacturers Association, International (FMA)</td>
<td>• Precision Sheet Metal Operator (PSMO)</td>
</tr>
<tr>
<td>Fluid Power</td>
<td>International Fluid Power Society (IFPS)</td>
<td>• Certified Fluid Power Specialist</td>
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<tr>
<td></td>
<td></td>
<td>• Certified Fluid Power Mechanic</td>
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<tr>
<td></td>
<td></td>
<td>• Certified Fluid Power Technician</td>
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<tr>
<td></td>
<td></td>
<td>• Certified Fluid Power Connector and Conductor</td>
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<tr>
<td></td>
<td></td>
<td>• Certified Fluid Power Engineer</td>
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<td></td>
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<td>• Certified Fluid Power System Designer</td>
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<td></td>
<td></td>
<td>• Certified Accredited Instructor</td>
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<td></td>
<td></td>
<td>• Certified Authorized Job Performance Proctor</td>
</tr>
<tr>
<td>Foundation Skills</td>
<td>ACT</td>
<td>• National Career Readiness Certification (NCRC)</td>
</tr>
<tr>
<td>Lean</td>
<td>SME</td>
<td>• Lean Manufacturing</td>
</tr>
<tr>
<td>Machining and Metalworking</td>
<td>National Institute for Metalworking Skills (NIMS)</td>
<td>• Apply for certification</td>
</tr>
<tr>
<td>Mechatronics</td>
<td>Packaging Machinery Manufacturing Institute (PMMI)</td>
<td>• Mechanical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Electrical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Logic Controls</td>
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<tr>
<td></td>
<td></td>
<td>• Computer Science</td>
</tr>
<tr>
<td>Quality</td>
<td>American Society for Quality (ASQ)</td>
<td>• Apply</td>
</tr>
<tr>
<td>Technology and Engineering – high skill</td>
<td>SME</td>
<td>• Certified Manufacturing Technologist (CMfgT)</td>
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<tr>
<td></td>
<td></td>
<td>• Certified manufacturing Engineer (CMfgE)</td>
</tr>
<tr>
<td>Transportation, Distribution and Logistics</td>
<td>Manufacturing Skill Standards Council (MSSC)</td>
<td>• Certified Logistics Technician (CLT)</td>
</tr>
<tr>
<td></td>
<td>Association for Operations Management (APICS)</td>
<td>• Production and Inventory Management (CPIM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Certified Supply Chain Professional (CSCP)</td>
</tr>
<tr>
<td>Welding</td>
<td>American Welding Society (AWS)</td>
<td>• Certified Welder</td>
</tr>
</tbody>
</table>
Organizations Included In Research

- **K-12.** Career Academies and Dual Enrollment Courses
- **Community-Based Organizations.** Certificate Courses and Programs
- **Community Colleges.** Continuing Education, Certificate, Degree, and Specialized Workforce Courses and Programs
- **Labor Organizations.** Pre-apprenticeships and Apprenticeships
  - **Industry Associations.** Certificate Courses and Programs
  - **TWC Eligible Training Provider System.** Courses and Programs Listed
  - **Universities.** Continuing Education and Certificate Courses and Programs
CATEGORIZED FINDINGS

CATEGORY 1
In-demand education and training programs are not filled

CATEGORY 2
In-demand education and training programs do not have capacity

CATEGORY 3
In-demand education and training programs do not exist
Under-Utilized

A variety of manufacturing courses and programs, including dual credit, pre-apprenticeships, certificate, credit, and workforce development were identified as available in and around the Austin area.
CATEGORY 2
PROGRAMS DO NOT HAVE CAPACITY

Logistics & Supply Chain Management

Filled/Over-Filled

• ACC has limited capacity for its continuing education programs for Logistics & Supply Chain Mgt.

• Texas State University has an online freight brokering class. However, capacity unknown.

(Note: Although these occupations were not specifically cited in the ARMA Workforce Study, they were included in the analysis because they offer a NAM-Endorsed Skills Certification.)
Non-existent

- ACC is creating courses geared towards Assemblers & Fabricators that are scheduled to begin in Fall 2018.
- TSTC and Texas State University have some programs that appear to be appropriate for General Machinists and Maintenance & Repair Workers; however, capacity is unknown.
- Courses were identified for general sales and software development, but none for manufacturing-specific occupations.
- Manufacturing-specific Career Academies do not exist.
Challenges

• Recruitment
  • Manufacturing employment has a stigma associated with it
  • Manufacturing employment is not actively promoted in schools
  • Manufacturing training programs are not actively marketed in the community

• Training Disconnection
  • Not all available programs and courses are included on the ETPS
  • Some information on the system was not correct

• Instruction Limitations
  • May be more difficult to attract and retain instructors for credit-based programs due to educational requirements
Opportunities

• Special Populations
  • Opportunity Youth
  • Ex-Offenders

• Demand-Driven
  • New programs and courses being developed to meet identified needs
  • Manufacturers can work with entities to develop business-specific courses

• Related Occupations
  • Skilled trade programs and courses available for truck driving, HVAC, construction, electrical, plumbing, etc. which are related to manufacturing
Recommendations – Awareness & Recruitment
Outreach Plan and Budget

• General Population
  • Social Media and Website
  • Brochures
  • Workforce Center Staff and Providers
  • Manufacturing Career Fairs and Manufacturing Training Fairs

• Opportunity Youth
  • High Schools (and Middle Schools)
  • Targeted Brochures
  • Peer-to-Peer
  • Foster Care
  • Component of Youth Programs and Field Trips
  • School Career Fairs and Manufacturing Day Promotion

• Ex-Offenders
  • Justice System
  • Targeted Brochures
  • Peer-to-Peer
Recommendations – Training

• Training Disconnection
  • Corrections and updates to ETPS
  • Dedicated staff to assist
  • Skilled Trades review

• New Mechanisms
  • Work-based training for Machinists and Maintenance Workers
  • Specific curricula for Sales and Software Developers
  • Manufacturing-specific track for Career Academies
  • Prior Learning Assessment
  • Feasibility of four-year advanced manufacturing degree
Post Project Thoughts

• Strategies for Retaining and Advancing Existing Workers
  • Creating a new or expanded apprenticeship programs
  • Re-purposing tuition reimbursement programs
  • Utilizing prior learning assessments
  • Expanding the use of stackable credits
  • Designing on-the-job training programs that provide credit or certifications
  • Attracting workers from low-wage jobs in other sectors
Post Project Thoughts

• Strategies for Creating Interest in Younger Youth
  
  • *Sponsoring Maker Fairs in early grades*
  
  • *Creating internships for students under the age of 18*
  
  • *Hosting counselors, teachers, administrators, and students at career expos*
  
  • *Creating Manufacturing Day events*
  
  • *Employing high-quality videos*
  
  • *Working with Texas FAME for “signing day” events*
  
  • *Researching the Dallas Promise initiative to determine replicability*
USDOL Apprenticeship Grant Opportunity

• Accelerate the expansion of apprenticeships to new industry sectors, including information technology, advanced manufacturing, banking and finance, and healthcare

• Competitive grants of $1 to $12 million

• Due October 16, 2018
Questions and Discussion
Presenter’s Contact Information

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