



Earning Credentials

Presented by MATEC NetWorks

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Earning Credentials

Presented by MATEC NetWorks



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**MARICOPA
COMMUNITY
COLLEGES**

NetWorks is part of MATEC, a member of Workforce Development, at the Maricopa Community Colleges, and funded in part by the National Science Foundation



**National
Science
Foundation**

Funded, in part, by a grant from the National Science Foundation. Due 1104159

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Participants

- Participants
- Shannon Payne (Mod...)
- craig holzinger
- mike lesiecki

3 Participants

Chat

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Microphone Speaker

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Whiteboard - Main Room



Earning Credentials

Presented by MATEC NetWorks



Chat

Whiteboard

In session for 1 hour, 21 minutes.

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1 Participant

Chat

Show All

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Audio

Microphone Speaker

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Earning Credentials

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In session for 1 hour, 21 minutes.



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Presenters

Moderator:



Dr. Marilyn Barger

Executive Director
Principal Investigator

(FLATE) The Florida Advanced
Technological Education Center



Rosa Schmidt

GIECP Project Manager

Center for Energy
Workforce Development



Brent Weil

Senior Director for
Education & Workforce

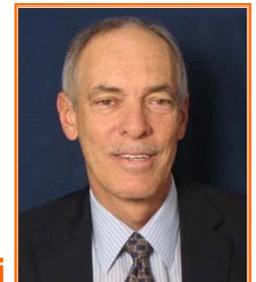
The Manufacturing Institute



Dr. Richard Gilbert

College of Engineering
Chemical & Biomedical
Engineering

University of Florida



Host: **Michael Lesiecki**



Today's Overview

- The Credential Landscape
- Industry Credentials - NAM National Perspective
- Industry Credentials - CEWD National Perspective
- FLATE/Florida Model



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Objectives

Objective 1: Understand the credential landscape from certificates to degrees

Objective 2: Know the value-add of credentials from an industry perspective

Objective 3: Identify a promising practices model of credentialing at a major community college



Earning Credentials – *what is it all about ?*

A credential refers to a verification of:

- qualification or competence issued to an individual by a third party
- with the relevant authority or jurisdiction to issue such credentials



Examples

- Academic diplomas, certificates & degrees
- Registered apprenticeship certificates
- Occupational licenses
- Certifications from industry or professional associations
- Other skill certificates for specific skill sets or competencies
- Badges



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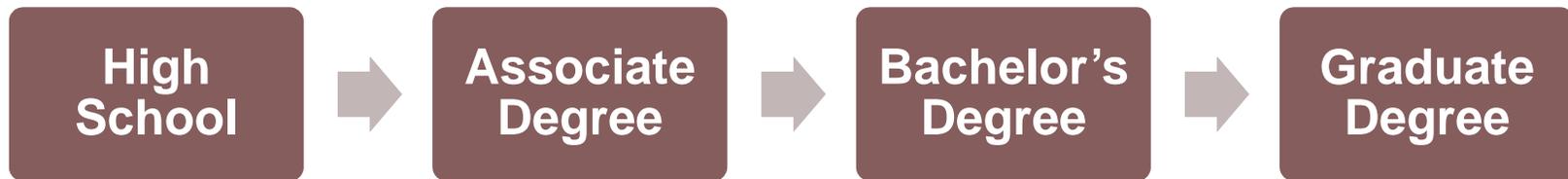
Question

WHY are educators
now so interested
in all these kinds
of credentials?



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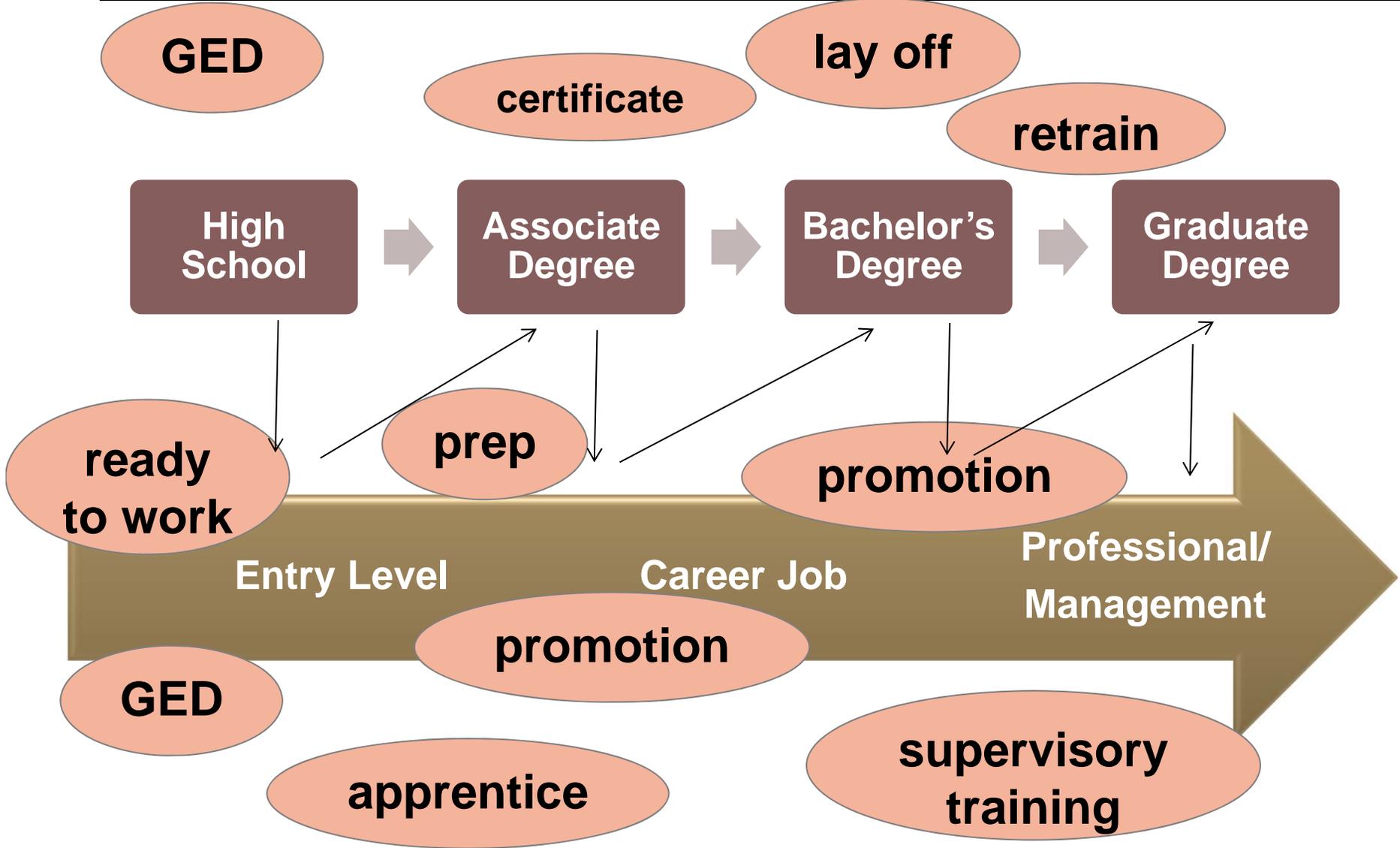
Our "Pathway"





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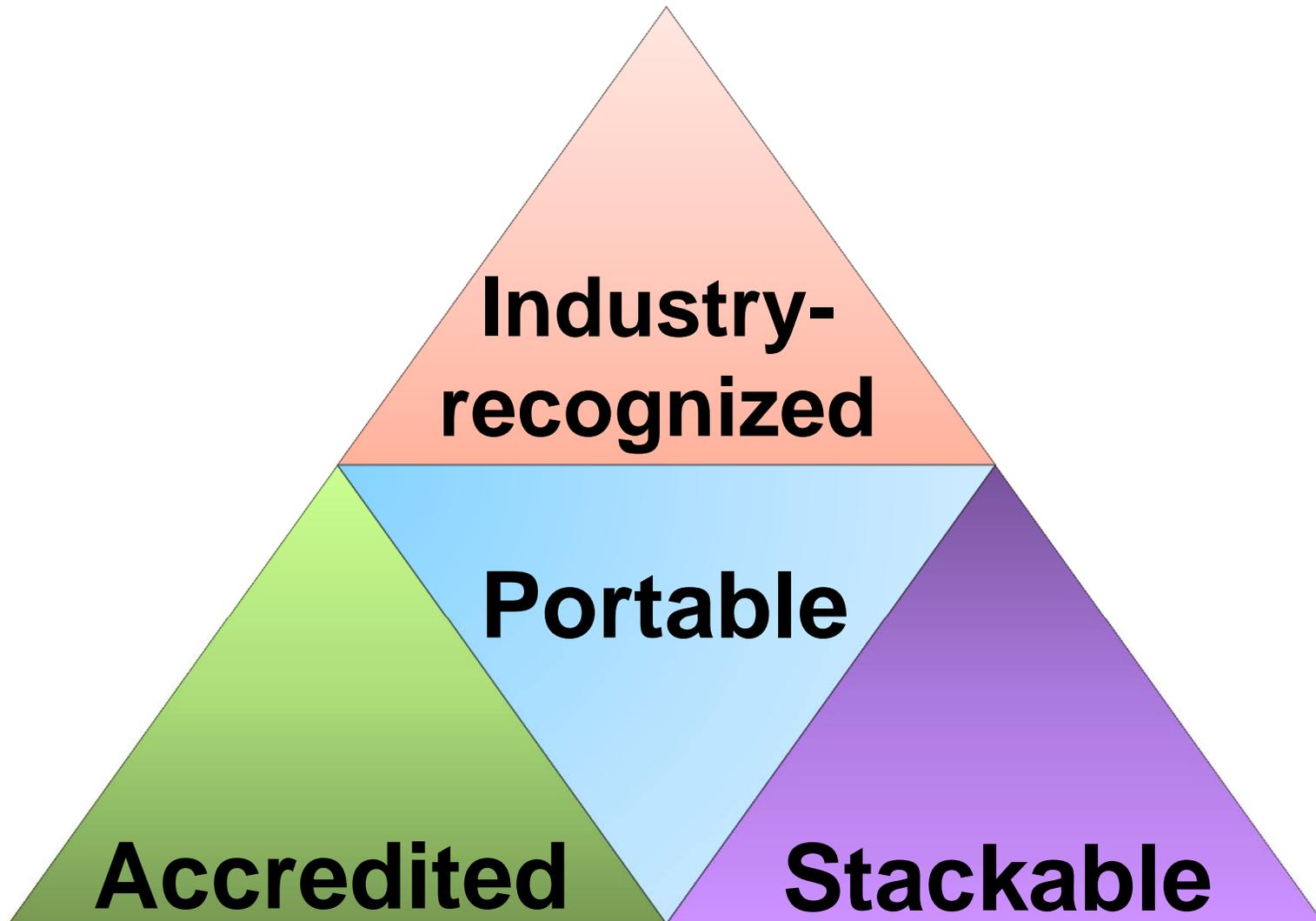
Reality for 21st Century Students





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What makes a “good” credential?

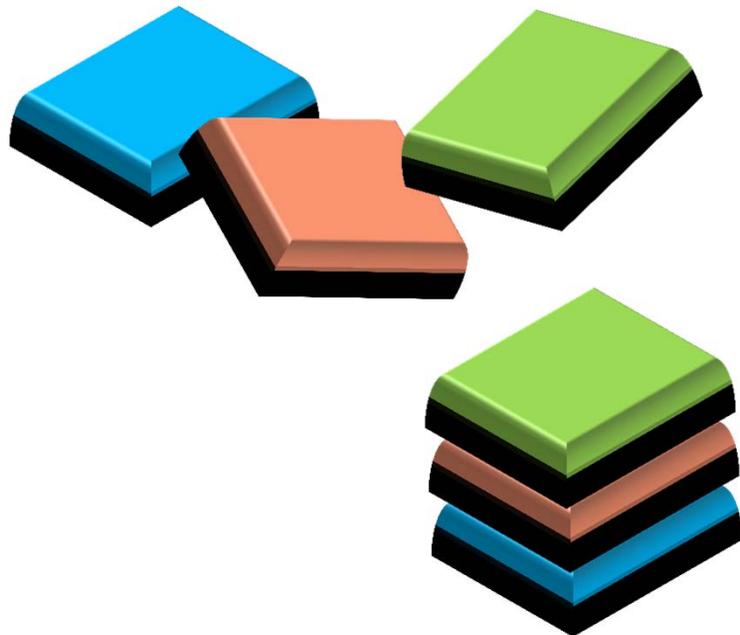




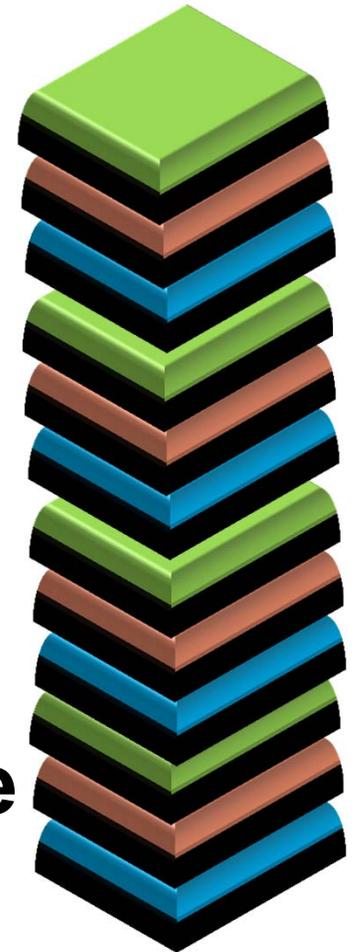
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Stackables

Sequence of credentials that build a person's qualifications for professional growth and career enhancements



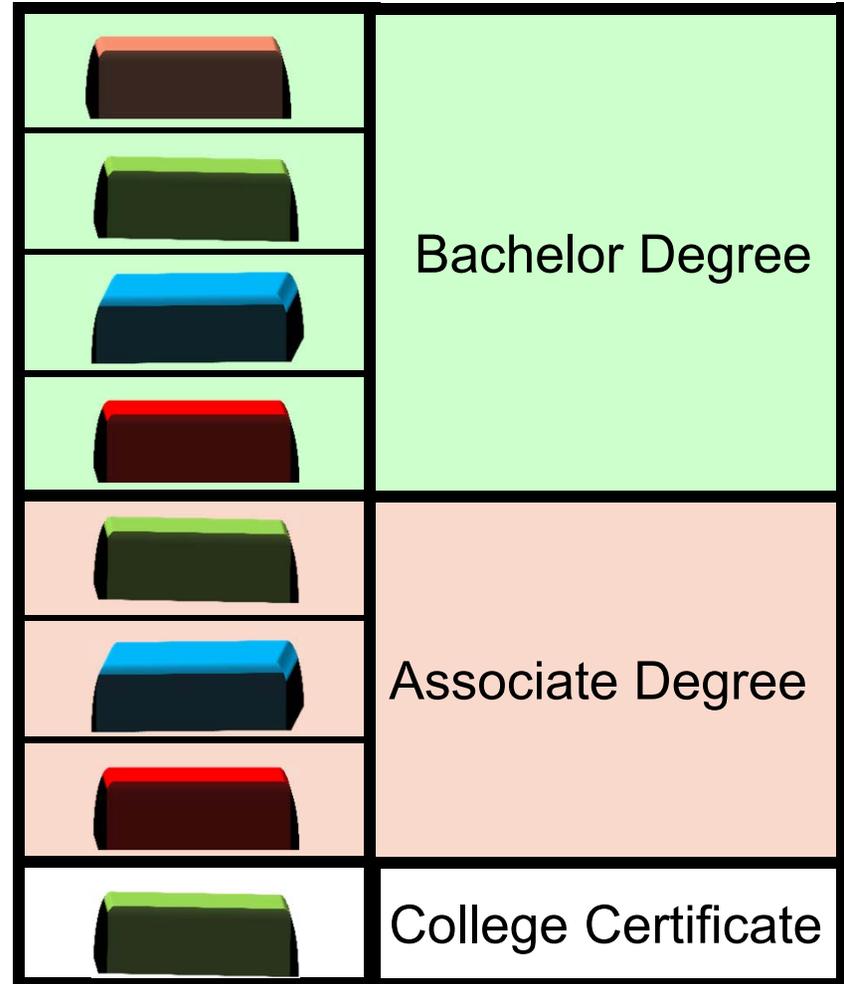
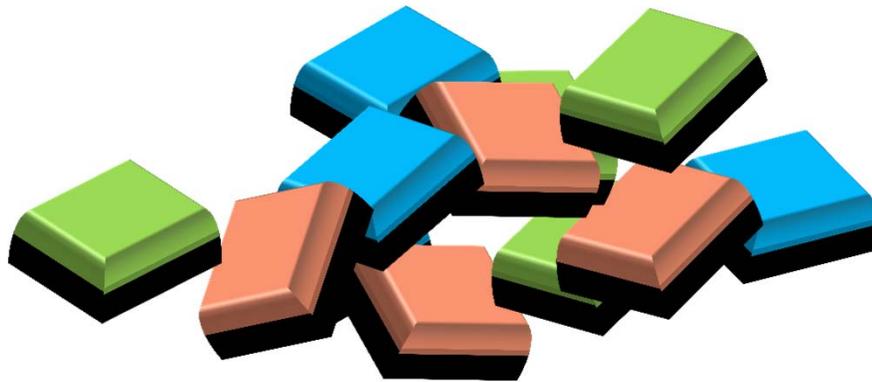
The value added is in the **sequence** and the **stack**





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Academically aligned stackables

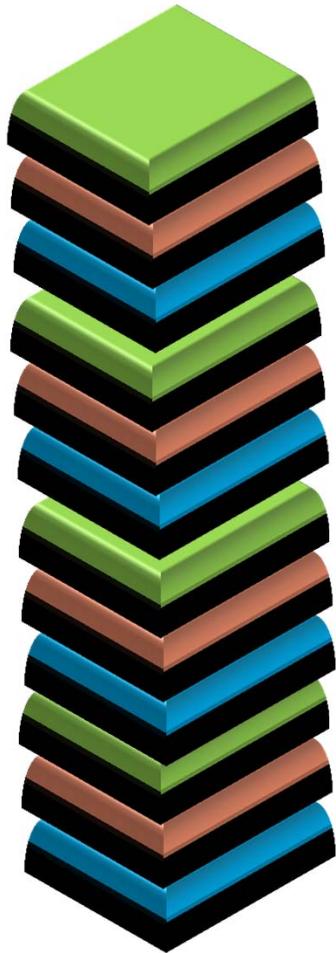


general education

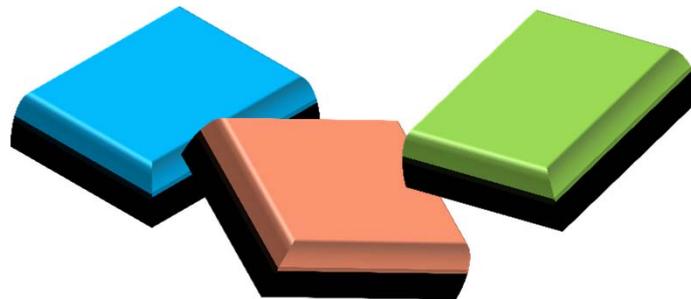


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Academically aligned stackables



- Define clear career pathways
- Keep industry alignment
- Provide multiple ins & outs to jobs and education





Competency-Based Credentials in Manufacturing

The NAM-Endorsed Skills Certification System

Brent Weil

Senior Director for Education and Workforce

The Skills Gap in Manufacturing

- 82% of manufacturers report a moderate or serious skills gap in skilled production.
- 74% of manufacturers report that this skills gap has negatively impacted their company's ability to expand operations.
- 69% of manufacturers expect the skills shortage in skilled production to worsen in the next 3-5 years.
- 5% of all jobs in manufacturing unfilled due to lack of qualified workers.



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Audience Poll

Manufacturers Need New Workforce Strategies

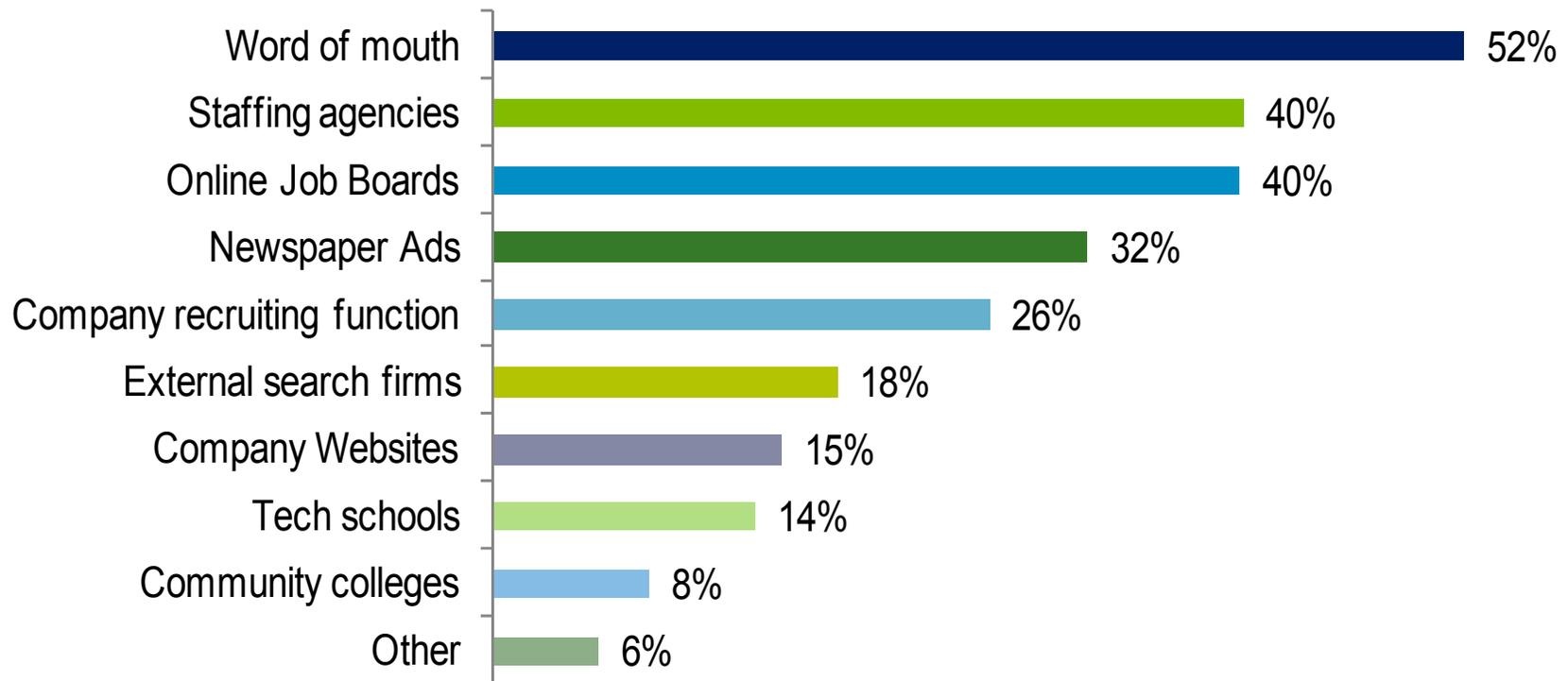
What is the top source for new employees?

- A. Company recruiting functions
- B. Word of mouth
- C. Online job boards
- D. Newspaper ads
- E. Staffing agencies

Manufacturers Need New Workforce Strategies



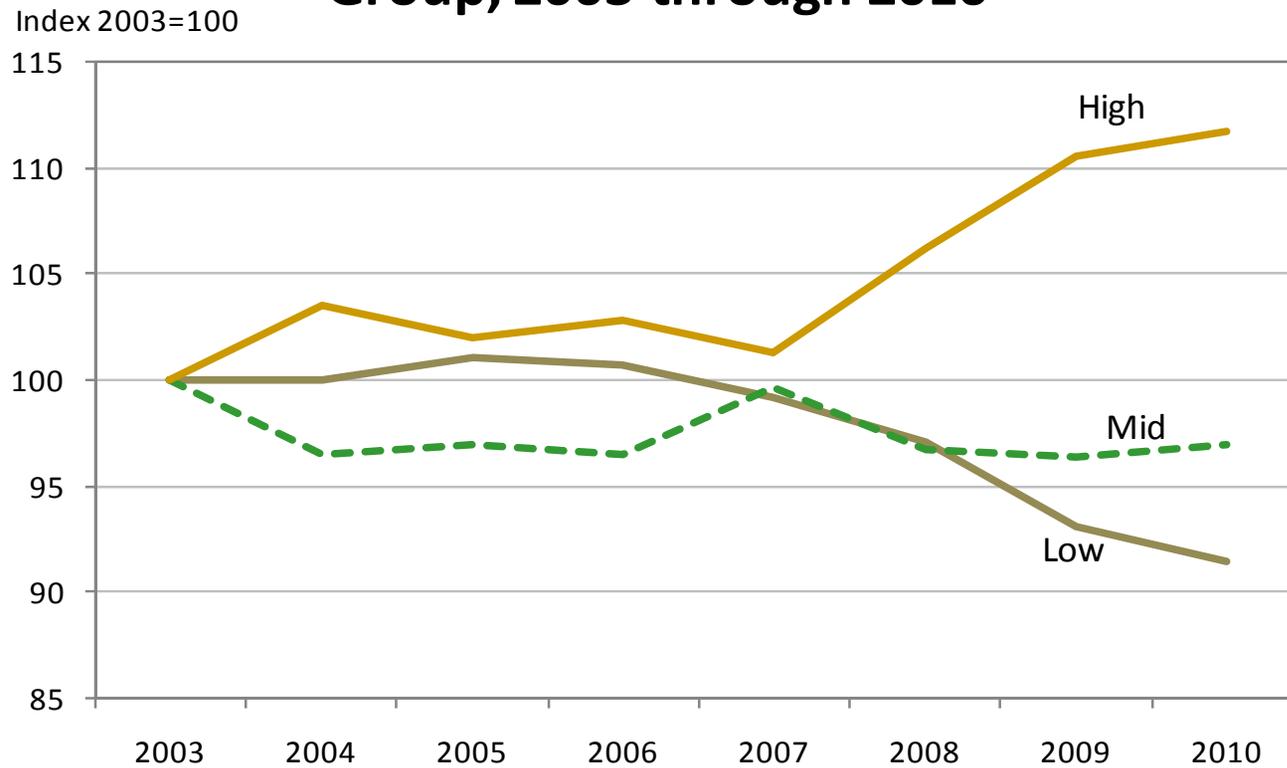
Top sources for new employees



Manufacturing Jobs Require Higher Skills



Manufacturing Employment by Skill Group, 2003 through 2010



Sources: Chmura Economics & Analytics and Current Population Survey.



MANUFACTURING

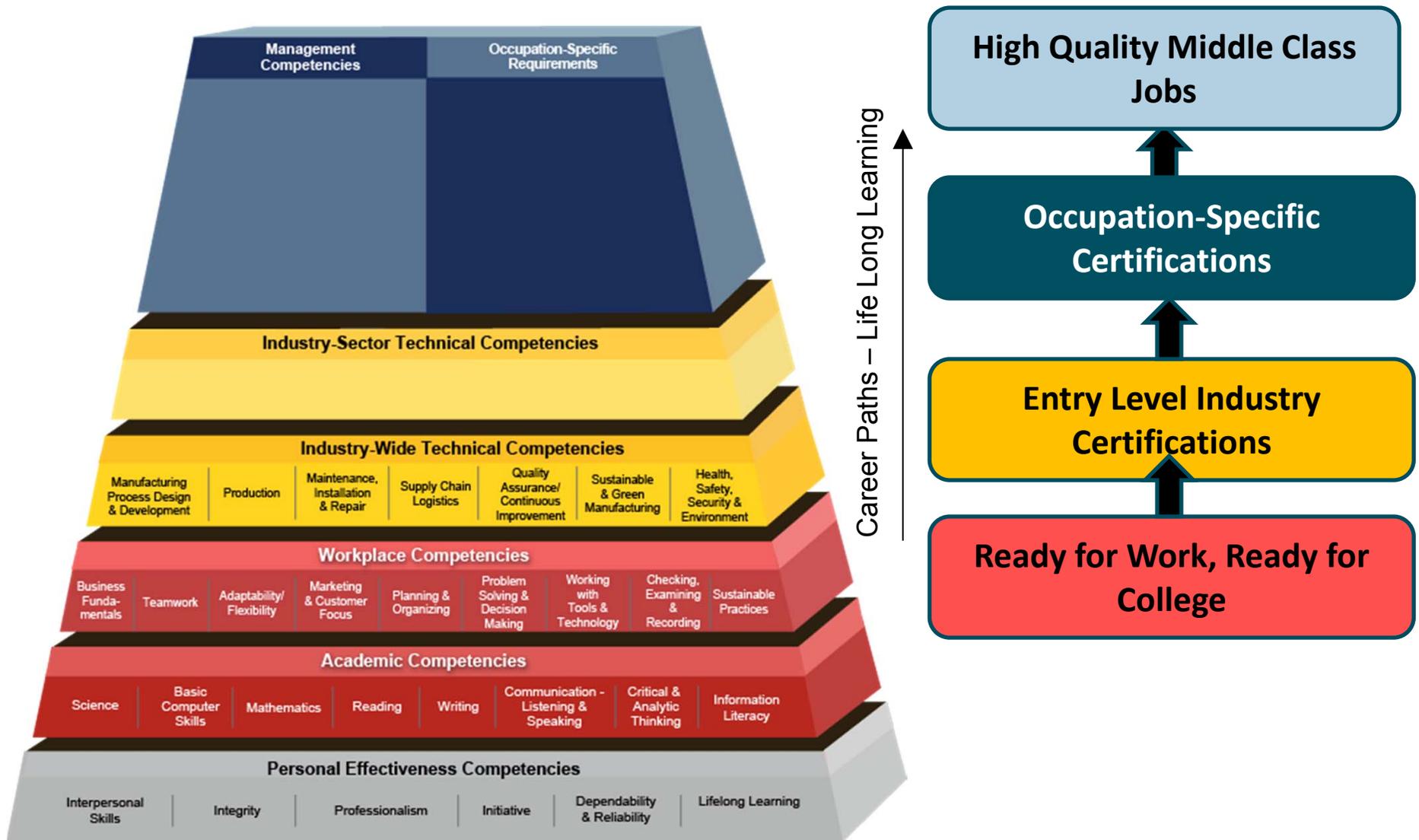
Institute

Skills Certification System



***PROVIDING COMPETENCY-BASED, CUSTOMIZED
EDUCATION AND TRAINING FOR THE MANUFACTURING
WORKFORCE...TODAY AND TOMORROW***

Advanced Manufacturing Competency Model



The NAM-Endorsed Manufacturing Skills Certification System



- Aligned to the Manufacturing Competency Model
- Nationally Portable
- Third-Party Validated (ISO/ANSI Preferred)
- Industry-Driven
- Data Based and Supported

Validating Skills with National Certifications



- **Academic & Workplace Competencies** (Reading & Writing, Applied Math; Locating Information)
 - National Career Readiness Certificate (ACT)
- **Production** (Safety, Quality Practices & Measurement, Manufacturing Processes & Production)
 - Certified Production Technician (MSSC)
- **Welding**
 - American Welding Society
- **Machining & Metalforming – CNC**
 - National Institute for Metalworking Skills
- **Technology & Engineering**
 - Society of Manufacturing Engineers



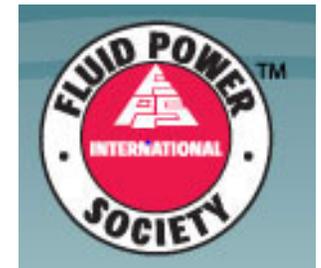
THE NATIONAL ASSOCIATION OF MANUFACTURERS ENDORSED
Skills Certification System

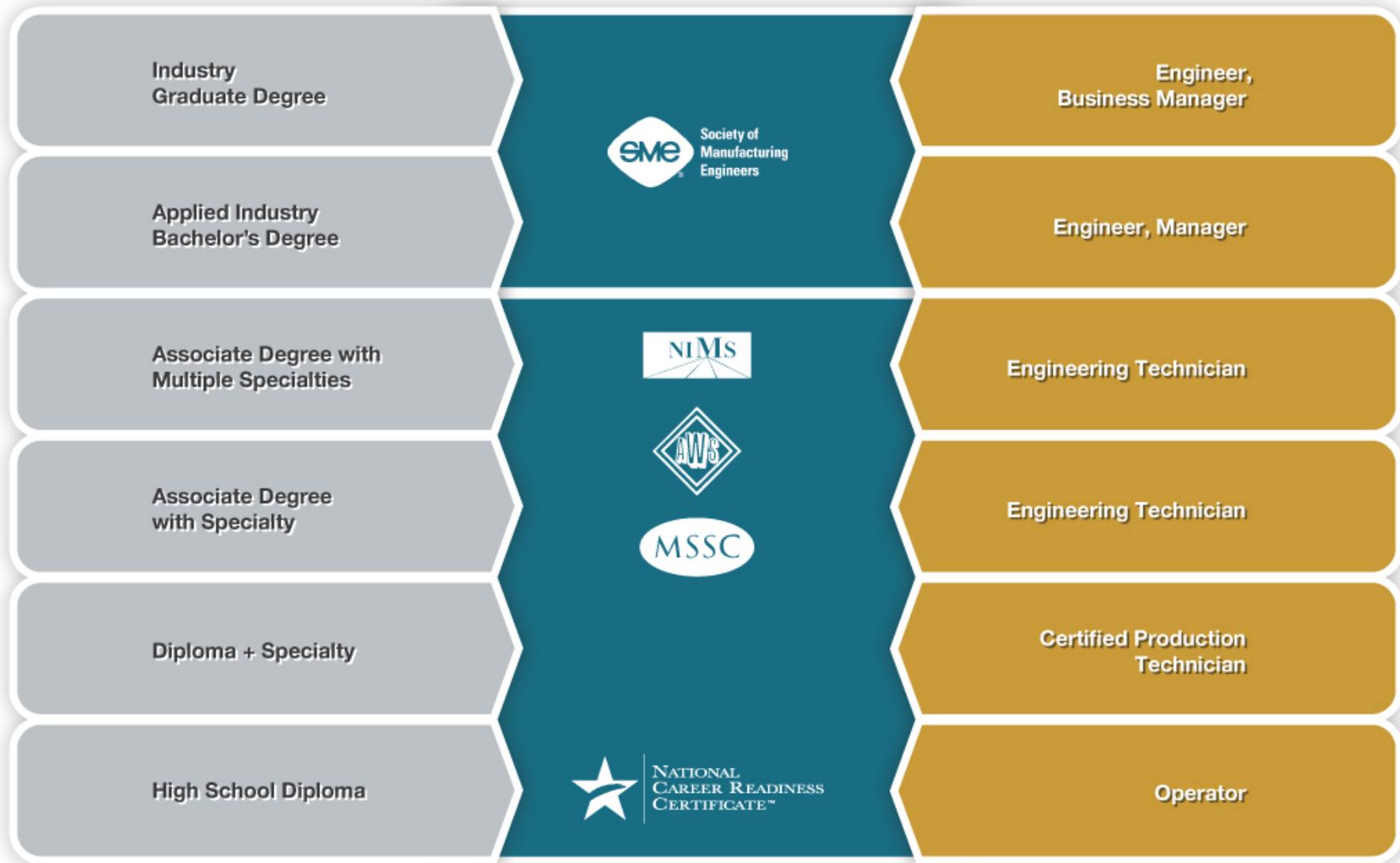
Producing a High-Performance Manufacturing Workforce

Founding Partners



Partners





Education Path

Certification Path

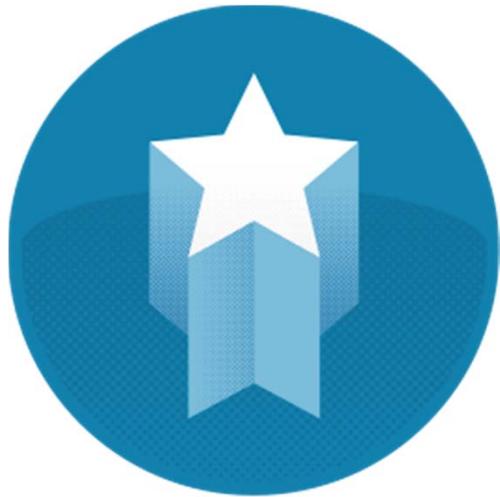
Career Path

Models

“If you look at how community colleges are organized... developmental education sits in one silo while non-credit workforce training sits in another silo. To achieve real solutions, we have to be much more integrated in how we deploy these assets.

*Roderick Nunn,
Vice Chancellor, St. Louis Community
College*

- High school to community college
- ABE/bridge programs to credit certificate/diploma/degree
- Continuing education to for-credit
- Community college integration into current for-credit programs of study
- Pre-apprenticeship to apprenticeship
- Community college to four-year institutions

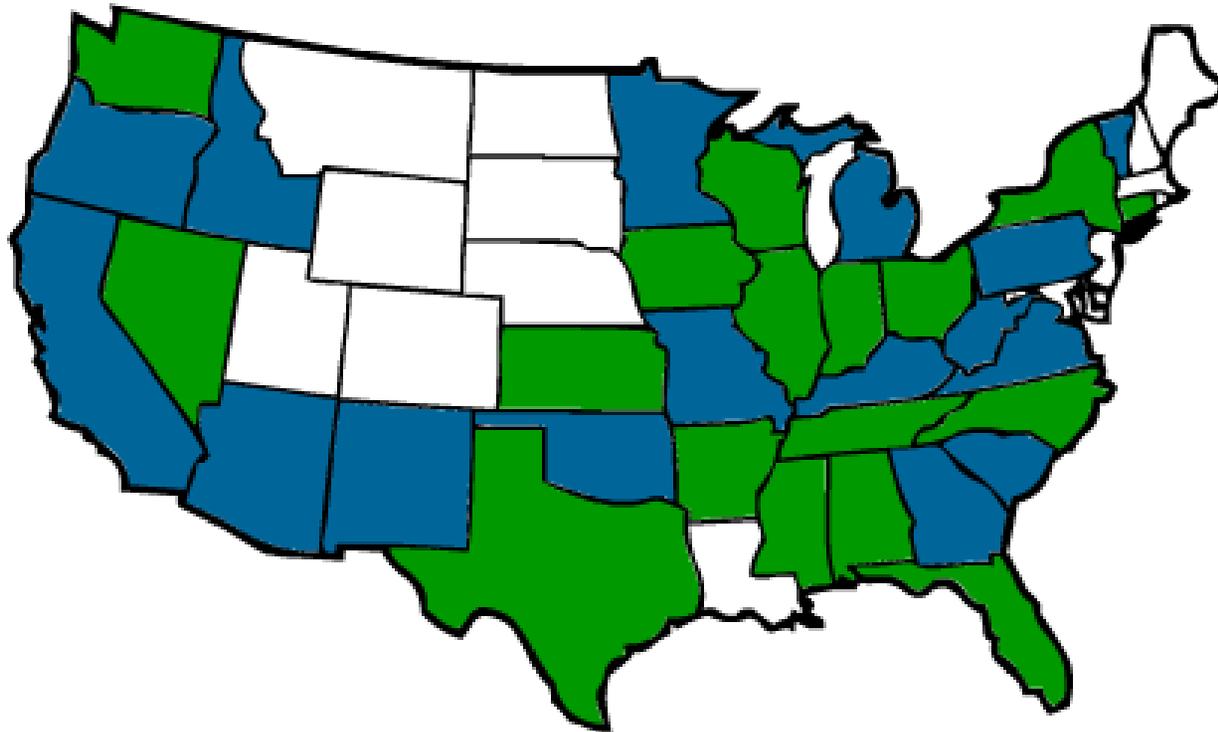


RIGHT SKILLS NOW

FOR MANUFACTURING

- Accelerated program first deployed in machining
- Designed to meet specific, immediate demand
- Grounded in the certifications to meet immediate need (basic skills and production)
- Supports dislocated workers and transitioning military
- Links to education to build the pathway

Deployment and National Scope



States with national philanthropic funding for deployment



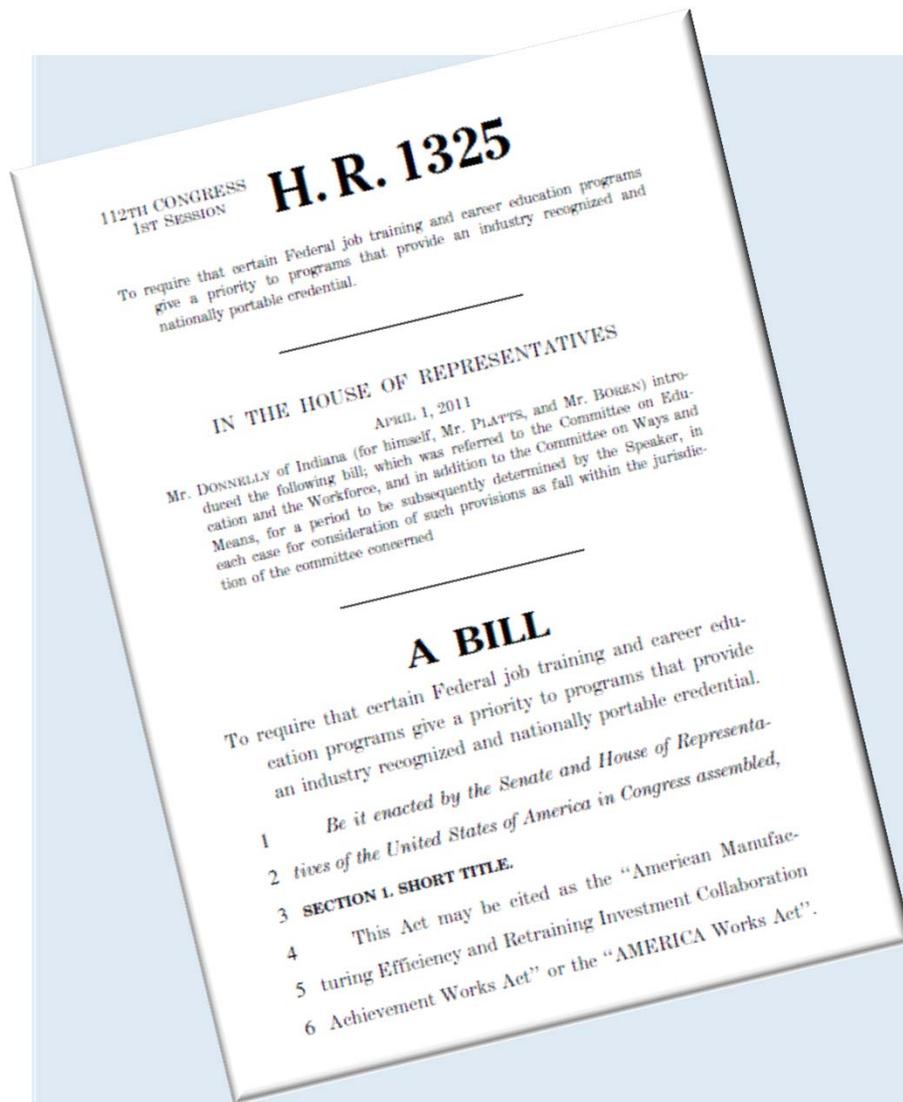
States with grassroots efforts and strategic partnerships advocating for deployment



Goal to Credential **500,000** Manufacturing Workers by

2016 

Championing National Legislation



America Works

To require that certain Federal job training and career education programs give a priority to programs that provide an industry recognized and nationally portable credential.

Contacts



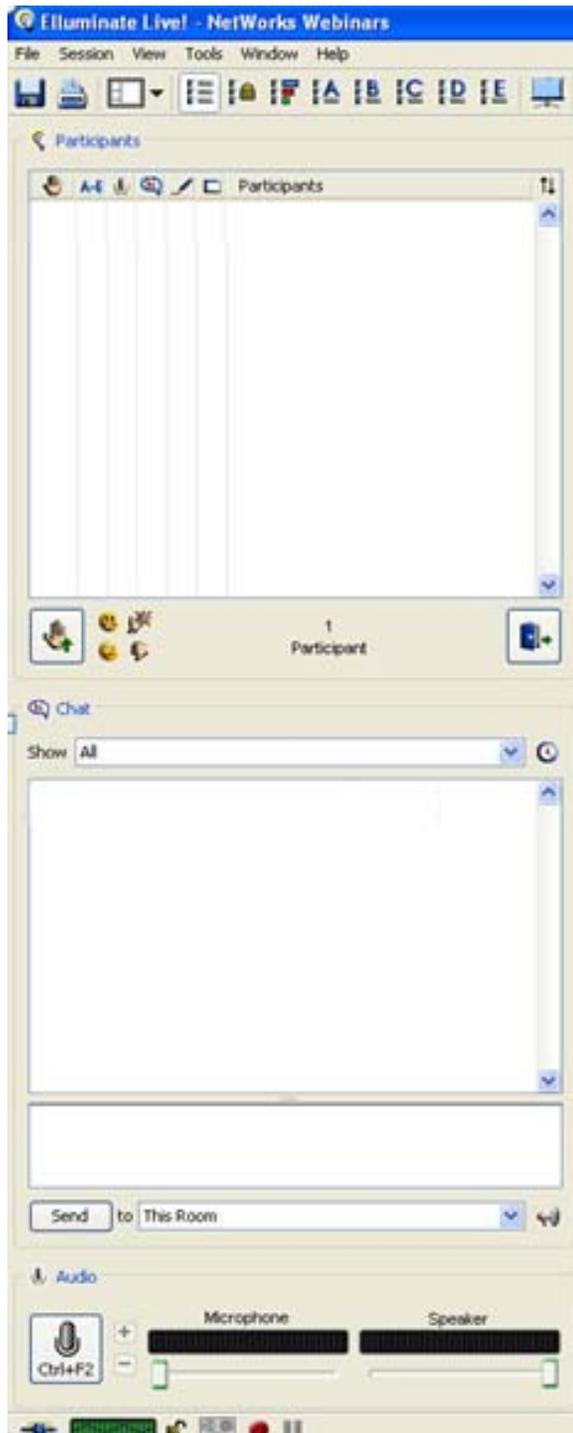
Brent Weil

Senior Director for Education and Workforce
The Manufacturing Institute

Direct: (202) 637-3134

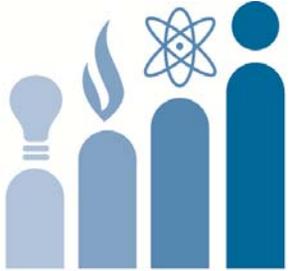
Cell: (703) 869-5355

bweil@nam.org



? Type questions in your chat window



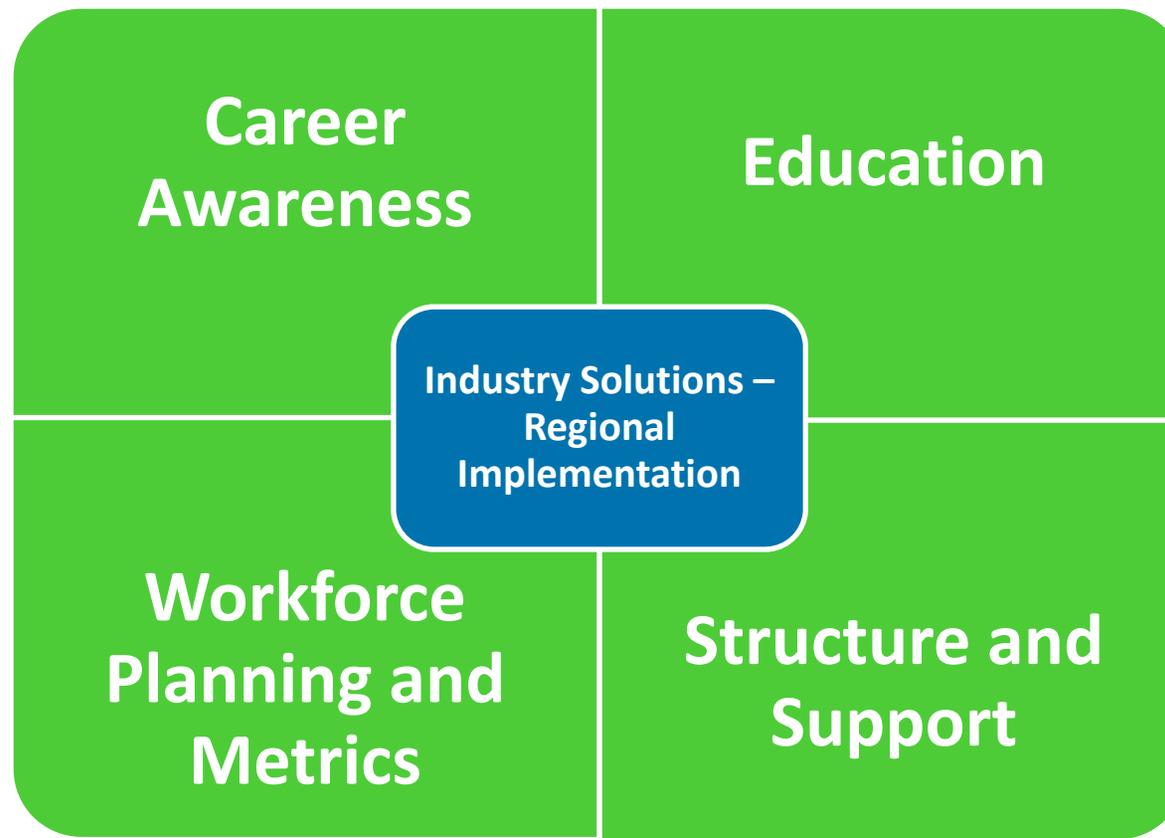
Center For
ENERGY 
Workforce Development
Industry Solutions—Regional Implementation



Credentialing in the Energy Industry

Rosa Schmidt, Education Consultant

Build the alliances, processes, and tools to develop tomorrow's energy workforce



http://www.youtube.com/watch?feature=player_embedded&v=SWgaAk4dMp0

Energy Career



Tier 6-8 – Occupation-Specific Competencies

| | | | | |
|----------------|-----------------------|------------------------|---------------------------------|----------------------------|
| Lineworker | Substation Technician | Engineering Technician | Relay Technician | Natural Gas Technology |
| Plant Operator | Electrical Technician | Mechanical Technician | Instrument & Control Technician | Alternate Fuel Technicians |

Tier 5 – Industry-Specific Technical Competencies

| | | | |
|---|--------------------|--------------------------------------|---------------------------------|
| Non-Nuclear Generation (Coal, Natural Gas, Oil, Hydro, Solar, Wind, Biofuel, Geothermal) | Nuclear Generation | Electric Transmission & Distribution | Gas Transmission & Distribution |
|---|--------------------|--------------------------------------|---------------------------------|

Tier 4 – Industry-Wide Technical Competencies

| | | | | |
|------------------|--------------------------------|----------------------------------|--|-----------------|
| Safety Awareness | Industry Principles & Concepts | Environmental Laws & Regulations | Quality Control & Continuous Improvement | Troubleshooting |
|------------------|--------------------------------|----------------------------------|--|-----------------|

Tier 3 – Workplace Competencies

| | | | | | | | |
|-----------------------|----------|----------------------|-----------------------------------|---------------------------------|--------|---|--|
| Business Fundamentals | Teamwork | Following Directions | Planning, Organizing & Scheduling | Problem Solving Decision Making | Ethics | Employability & Entrepreneurship Skills | Working with Basic Hand & Power Tools & Technology |
|-----------------------|----------|----------------------|-----------------------------------|---------------------------------|--------|---|--|

Tier 2 – Academic Competencies

| | | | | | | | | |
|-------------|---------------------------------------|---------|-----------|----------|--------------------------|--------------------------------|---------|------------------------|
| Mathematics | Locating, Reading & Using Information | Writing | Listening | Speaking | Engineering & Technology | Critical & Analytical Thinking | Science | Information Technology |
|-------------|---------------------------------------|---------|-----------|----------|--------------------------|--------------------------------|---------|------------------------|

Tier 1 – Personal Effectiveness Competencies

| | | | | | | | | |
|----------------------|-----------|-----------------|------------|------------|-----------------------------|------------------|----------------------------|------------------|
| Interpersonal Skills | Integrity | Professionalism | Reputation | Motivation | Dependability & Reliability | Self-Development | Flexibility & Adaptability | Ability To Learn |
|----------------------|-----------|-----------------|------------|------------|-----------------------------|------------------|----------------------------|------------------|



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Audience Poll

What is the most valuable credential an energy workforce technician can possess today?

- A. NCRC
- B. CPR certificate
- C. All credentials aligned to the competencies of the job
- D. Energy Industry Employability Skills certificate
- E. Not sure

Tier 6–8 Job Specific Skills/Credentials

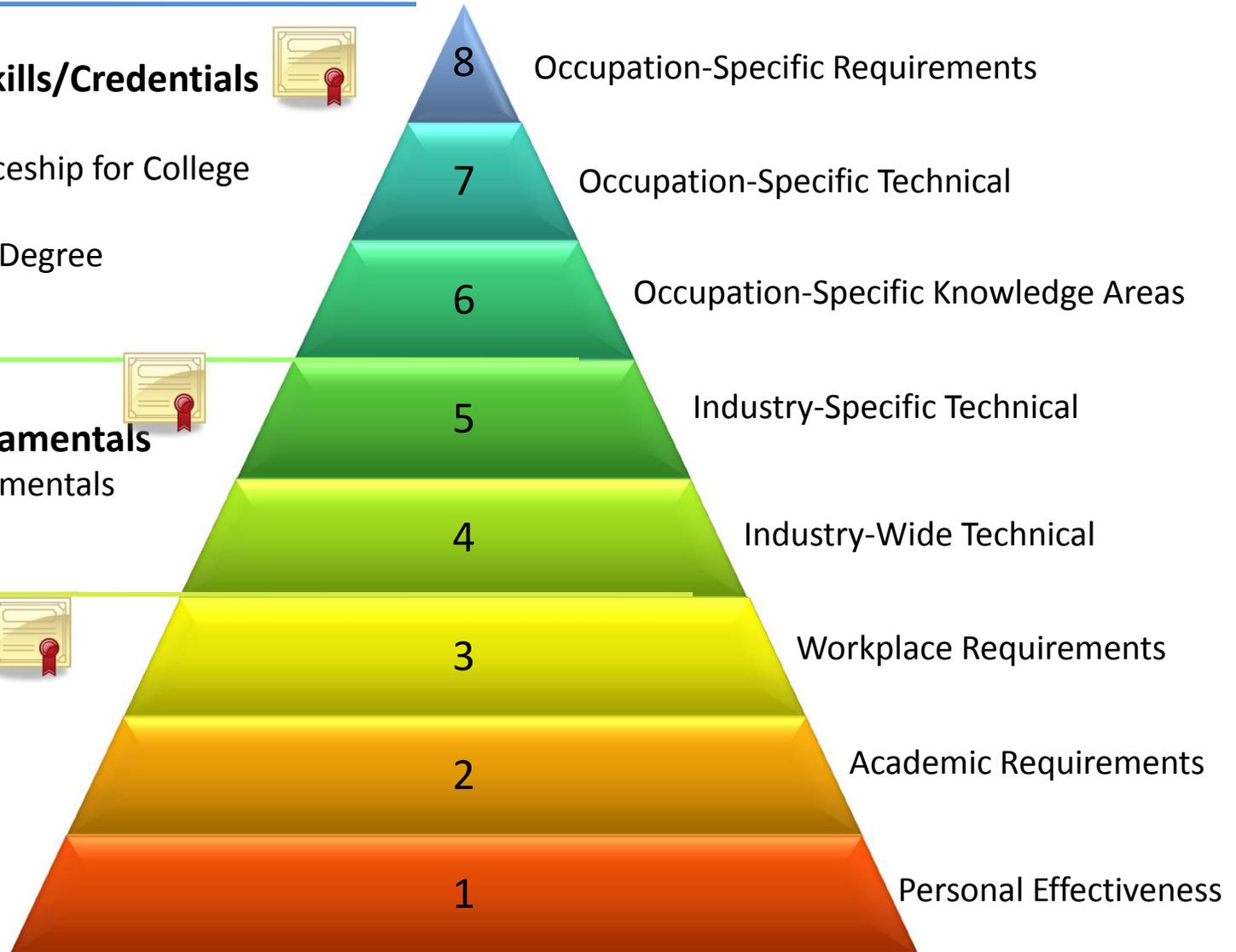
- Associate Degree
- Boot Camp / Apprenticeship for College Credit
- Accelerated Associate Degree

Tier 4–5 Industry Fundamentals

- Energy Industry Fundamentals Certificate

Tier 1–3 Basic Training

- Energy Industry Employability Skills Certificate
- National Career Readiness Certificate



Energy Competency Tier Model for Skilled Technician Positions in Energy Efficiency, Energy Generation and Energy Transmission and Distribution

Education

Tiers 1-5 Credentials – the foundation

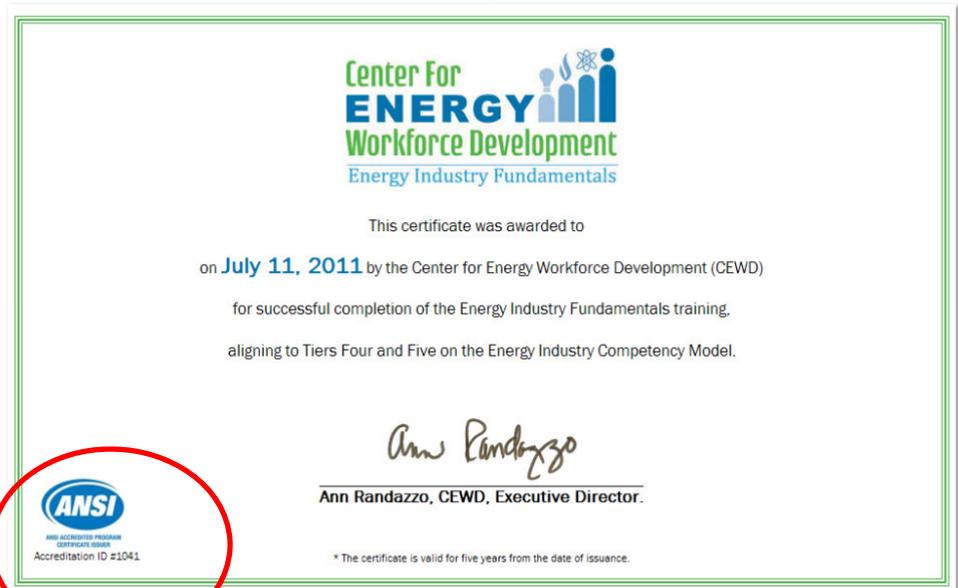
- National Career Readiness Certificate
- Energy Employability / Work Keys
- Energy Industry Fundamentals (EIF)

- NCRC and Energy Employability assess ability to begin training; testing the levels for success through pilots
- EIF curriculum now available
- ANSI accredited certificate available to approved providers

Why an Energy Industry Fundamentals Certificate?

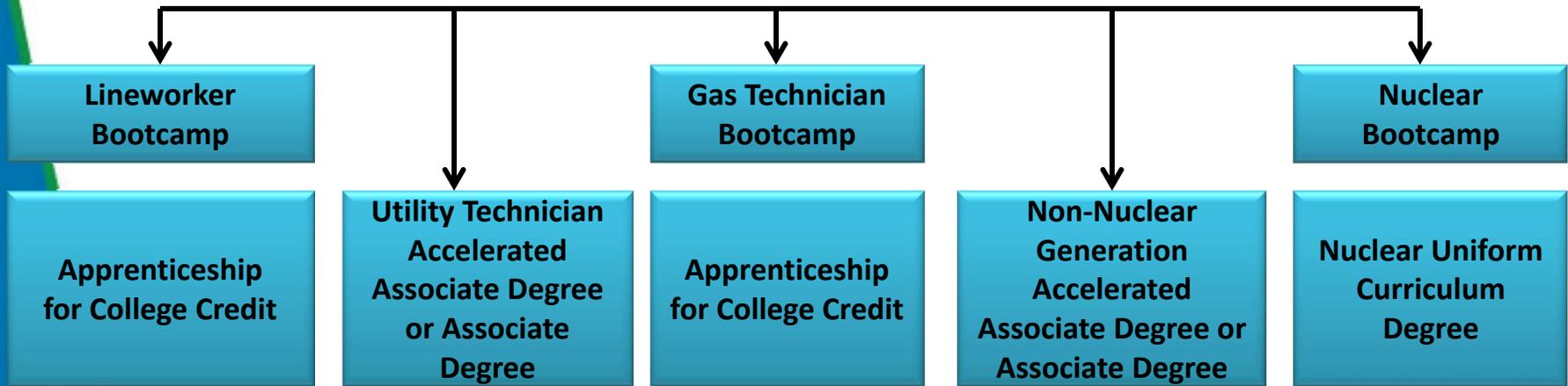
There is no other credential that ensures potential workers have an understanding of the industry as a whole.

- This training/credential helps make occupation-specific training more meaningful, and
- Enables students to understand how individual companies and jobs fit into the big picture.



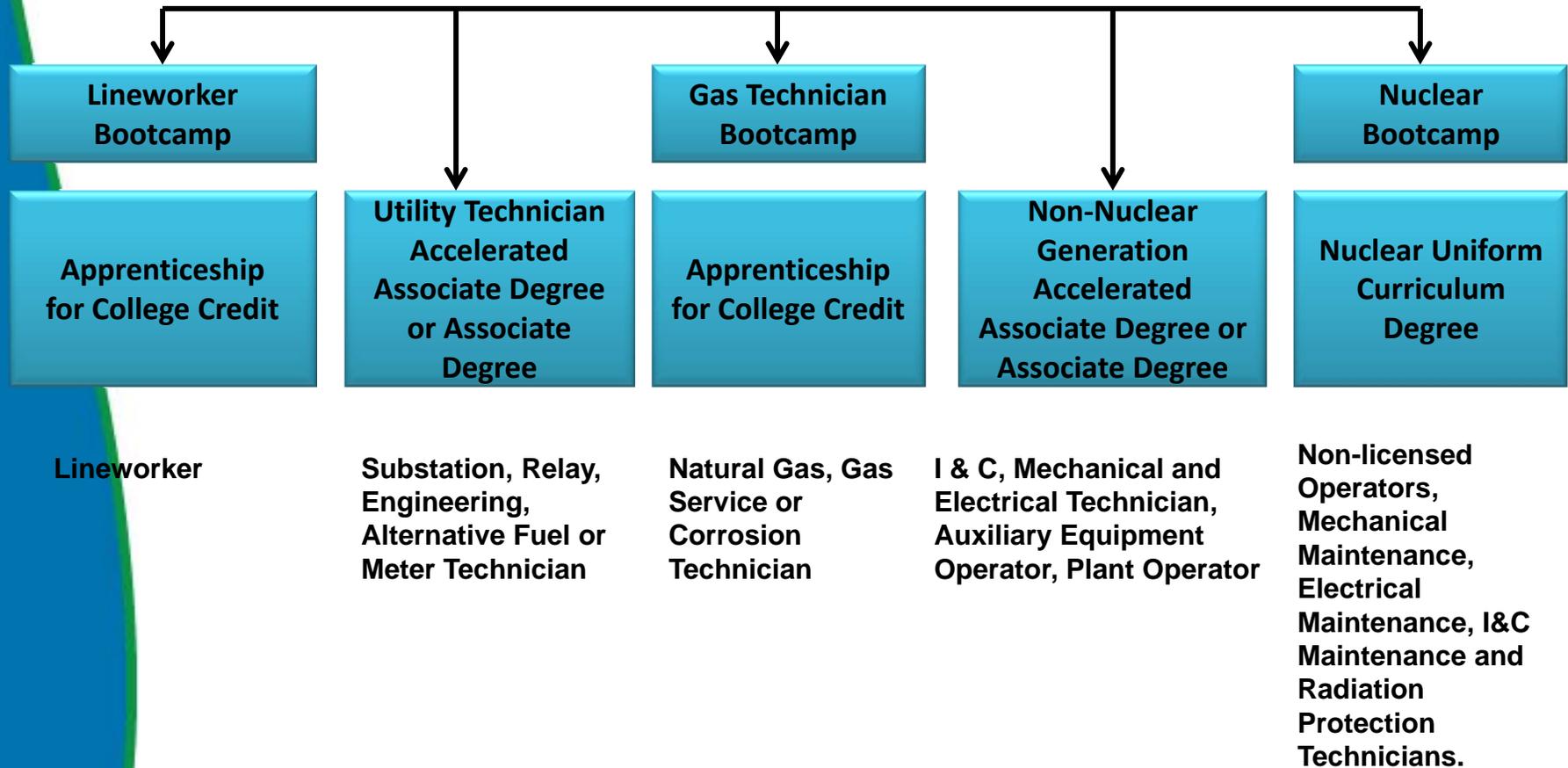
Education

Tiers 6-8 Credentials – Job Specific



Education

Tiers 6-8 Credentials – Job Specific



GET INTO ENERGY
CAREER PATHWAYS

Lineworkers:
Putting STEM* to Work

START
HERE

HIGH SCHOOL
DIPLOMA OR GED

EARN CREDENTIALS:

- National Career Readiness Certificate
- Energy Employability Skills Certificate
- Industry Fundamentals Certificate
- Lineworker Boot Camp (for Credit)

LEARN MORE / EARN MORE

Pass Pre-Employment Tests and Become a
LINE HELPER

EDUCATIONAL OPPORTUNITIES
FOR ADVANCEMENT

- Apprenticeship (for College Credit)**
- Experience in Position

1-5 YEARS**

APPRENTICE
(\$33,000)

- Associate's Degree
- Long-Term On-the-Job Training

3-6 YEARS**

LINEWORKER
(\$57,000)

- Long-Term On-the-Job Training
- Experience in Position

6-8 YEARS**

SENIOR-LEVEL CREW LEADER
(\$79,000)

- Bachelor's Degree
- Long-Term On-the-Job Training

8+ YEARS**

SUPERVISOR
(\$85,000)

* Science, Technology, Engineering, and Math

** Dependent on company requirements



LINE WORKER: What will you do?

What competencies will you need? (built on energy foundational competencies—incremental as career advances)

Note: Most utilities use a pre-employment test—to pass you will need math, communications, problem solving, and mechanical reasoning skills.

STARTING OFF AS A LINE HELPER:

- Provide assistance to line crew by providing tools and equipment
- Make work area safe
- Drive equipment to job site

- Teamwork
- Be comfortable with heights
- Able to drive heavy commercial vehicles
- Able to lift 75 lbs
- Listen and follow directions
- Come to work on time

APPRENTICESHIP TRAINING COMPONENTS:

- Alternating Current / Direct Current
- Pole climbing
- Stringing cable
- Installing transformers and other pole top equipment

- Apply knowledge learned during training to work environment

LINEWORKER:

- Install equipment on poles
- Climb poles
- Identify defective devices such as fuses, switches, and wires
- Lay underground cable
- Inspect and test power lines

- Define how the various parts of systems interact (e.g., parts of the distribution systems) and diagnose the effect on the system of changes or malfunctions in its parts
- Solve problems involving limited options by applying common sense understandings such as selecting the correct cutting tool or proper gauge of wire for a job
- Listen to and understand customer needs
- Be able to stand for long periods of time
- Understand mechanical relationships in practical situations such as understanding leverage, how pulleys work, and the direction gear arrangements turn
- Visualize length, width, thickness, height, or depth and the differences among shapes, widths, or lengths

SENIOR-LEVEL CREW LEADERS:

- Supervise crew members
- Determine schedules and work activities
- Check for unsafe work conditions
- Communicate with customers
- Install equipment on poles
- Climb poles
- Identify defective devices such as fuses, switches, & wires
- Lay underground cable
- Inspect and test power lines

- Handle customer concerns and issues
- Assign priority or sequence to the steps for completing a job
- Coordinate several competing activities for efficient use of time and material
- Adapt work procedures or priorities in response to changing or unforeseen requirements or conditions

SUPERVISOR:

- Schedule and oversee work of line crews
- Review crew member performance and provide feedback

- Financial management
- Computer skills for report preparation
- People management



ENERGY INDUSTRY COMPETENCY MODEL



Energy industry careers offer:

- Excellent salaries
- Job growth & stability
- Great benefits
- Opportunities for advancement
- Community service

Where can I find training?

Go to the Get Into Energy web site at www.getintoenergy.com/careers.php and check "Training Programs and Work-Based Training."

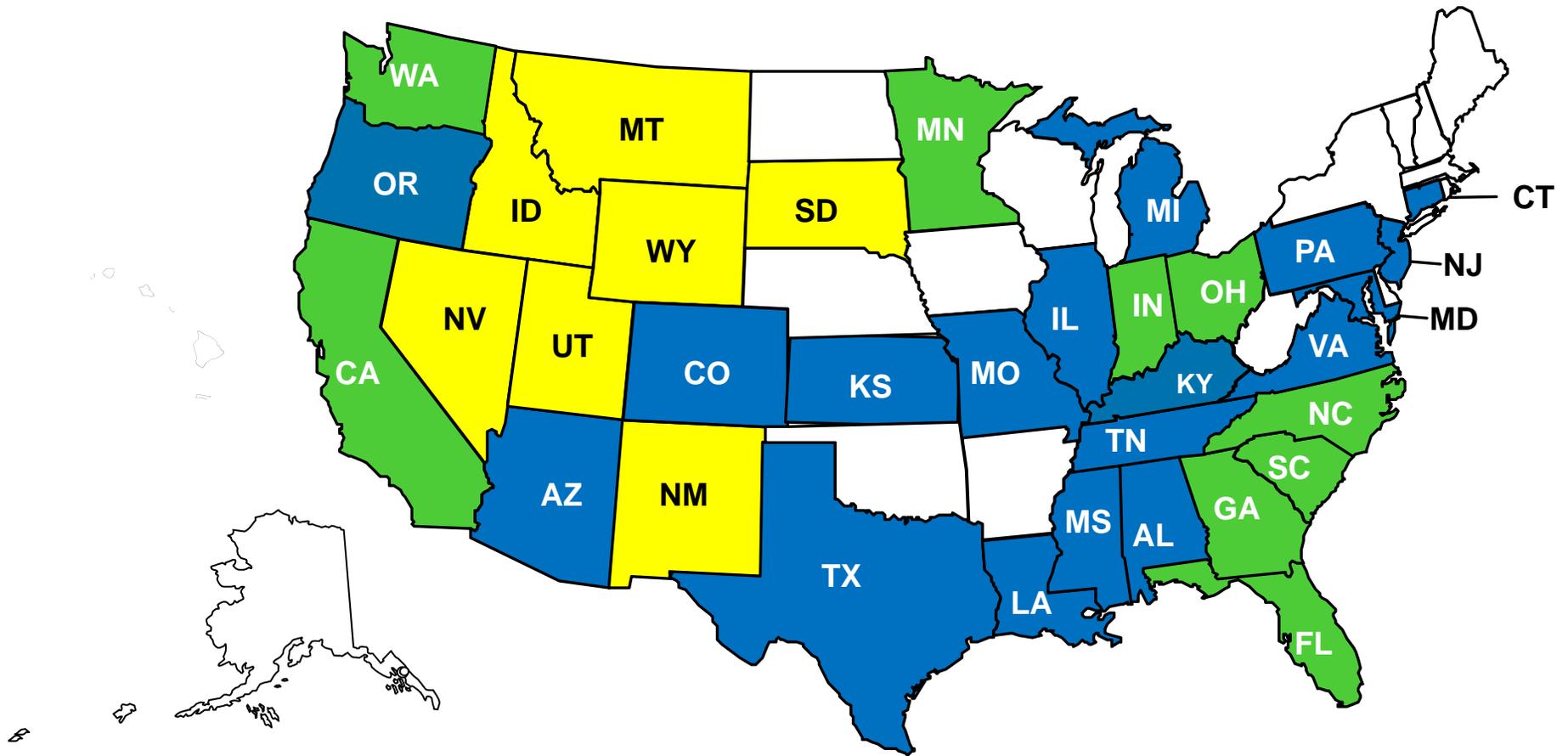
Where can I find a job?

Go to the Get Into Energy web site at www.getintoenergy.com/careers.php and check "Featured Employers."

What's next?

- Integration of military credentials
- Prior learning credit for military training
- Lineworker and apprenticeship credit recommendations from ACE
- Articulation framework for pathways
- State Energy Career Clusters for Energy Programs of Study

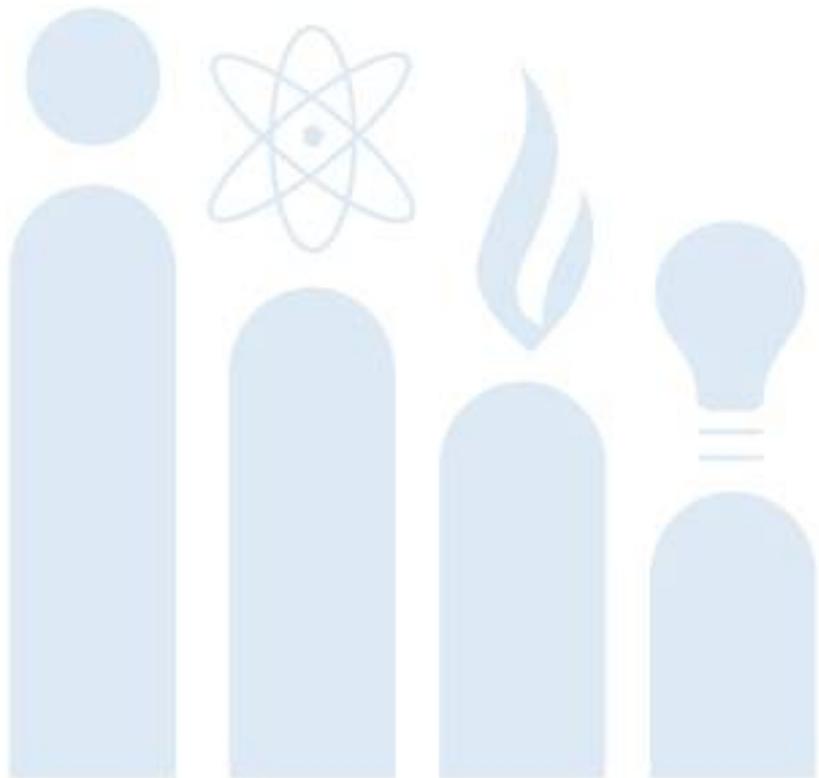
State Energy Workforce Consortia



■ GIECP Pilot States ■ Existing Consortium ■ Planned Consortium

Center For
ENERGY
Workforce Development

Industry Solutions—Regional Implementation



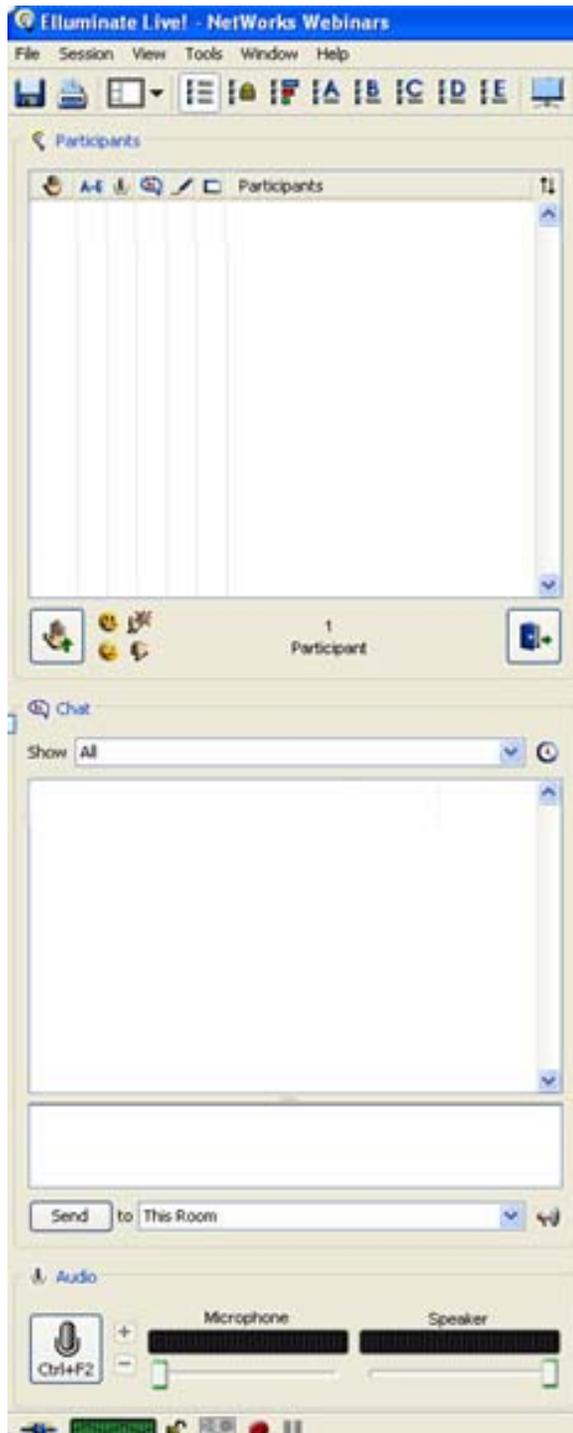
For more information, contact:

Rosa Schmidt
Education Consultant

Center for Energy
Workforce Development
701 Pennsylvania Ave., N.W.
Washington, D.C. 20004-2696

rosa@cewd.org

www.cewd.org



? Type questions in your chat window

The Florida Plan & Engineering Technology Education

Industry-aligned, credential-based technical education

FLATE

Florida's Advanced Technological Education Center of Excellence



Impact Florida. Lead Nationally.



Impact Florida. Lead

Florida's A.S. Engineering Technology Degree

60 semester hours

I. General Education – 15 - 18 credit hours

II. ET Core - 18 credit hours

III. 8 Specialization Tracts – 24 to 27 credit hours



Impact Florida. Lead

Florida's A.S. Engineering Technology Degree

60 semester hours

I. General Education – 15 - 18 credit hours

| | |
|------------|----------------|
| English | Science |
| Math | Social Science |
| Humanities | |

II. ET Core - 18 credit hours

| | |
|-------------------------------------|-------------|
| Computer Aided Design | Electronics |
| Manufacturing Processes & Materials | Quality |
| Mechanics & Instrumentation | Safety |

III. 8 Specialization Tracts – 24 to 27 credit hours

| | |
|------------------------|---------------------------------|
| Advanced Manufacturing | Advanced Technology |
| Biomedical Systems | Digital Design & Modeling |
| Electronics | Mechanical Design & Fabrication |
| Quality | Alternative Energy Systems |



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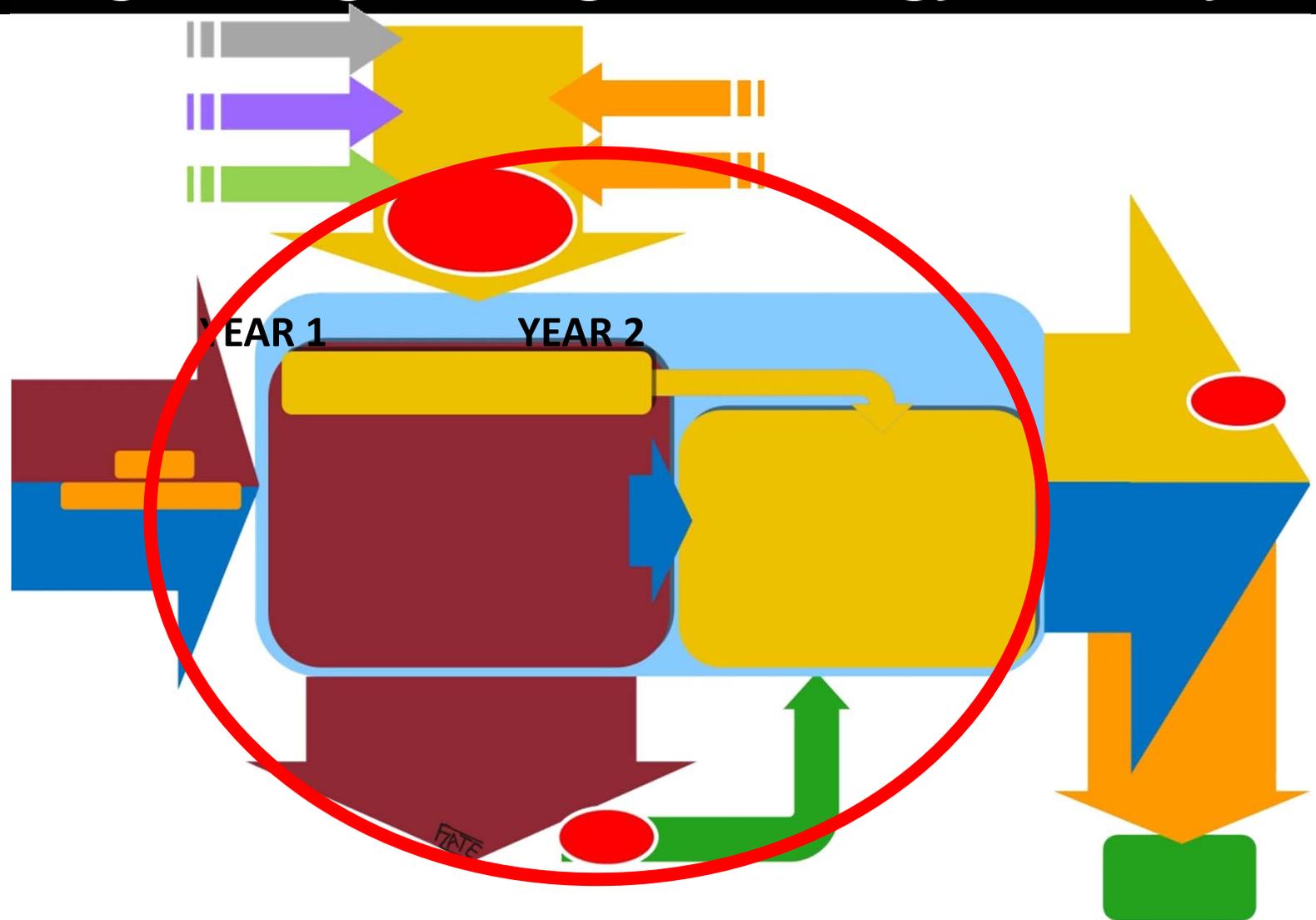
III. 8 Specialization Tracts – 24 to 27 credit hours

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| Quality | Alternative Energy Systems |



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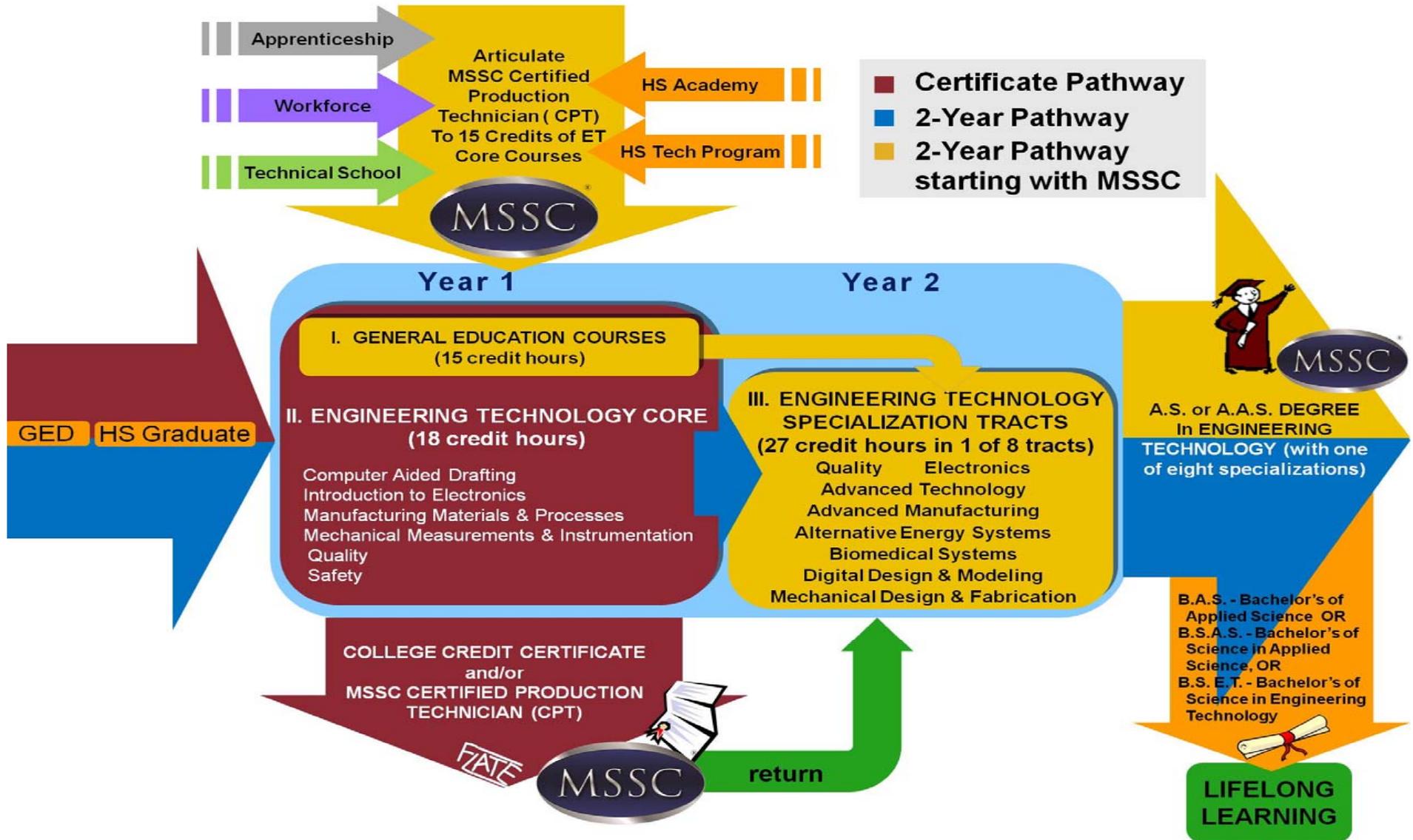
A.S. Degree Engineering Technology Pathways





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A.S. Degree Engineering Technology Pathways

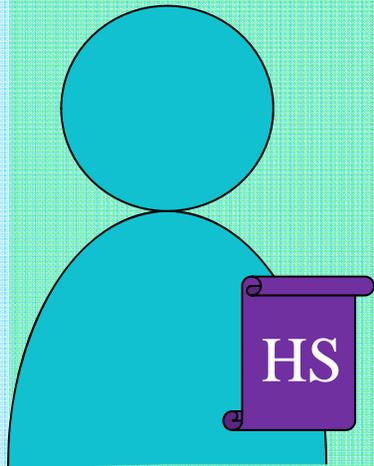




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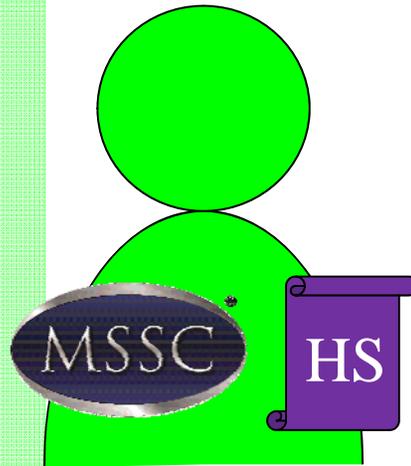
A.S. Degree Engineering Technology Pathways

HS Grad / GED with no Technical Program - *wants AS Degree*



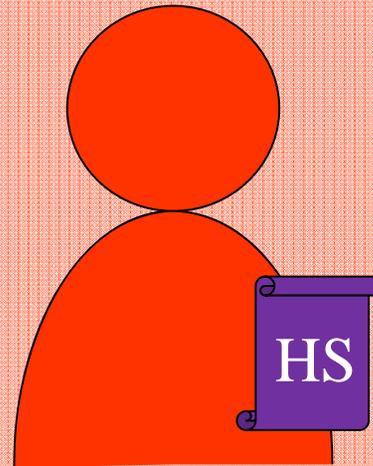
AS/AAS Degree (and optional certificates)

HS Grad / GED with MSSC Certification - *wants AS Degree*



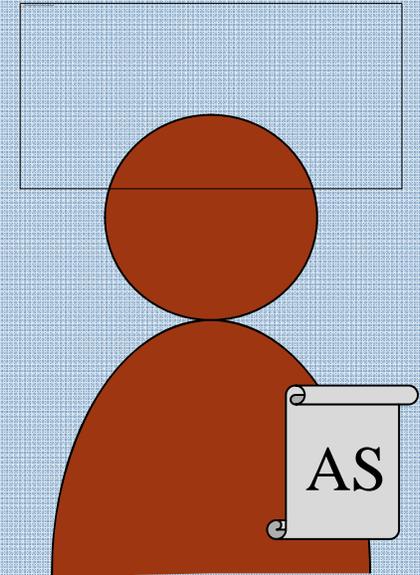
AS/AAS Degree & MSSC CPT (and optional certificates)

HS Grad / GED without Technical Program – *wants certificate and/or MSSC*



College Certificate & MSSC CPT

AS ET Graduate – *wants BS/BA*

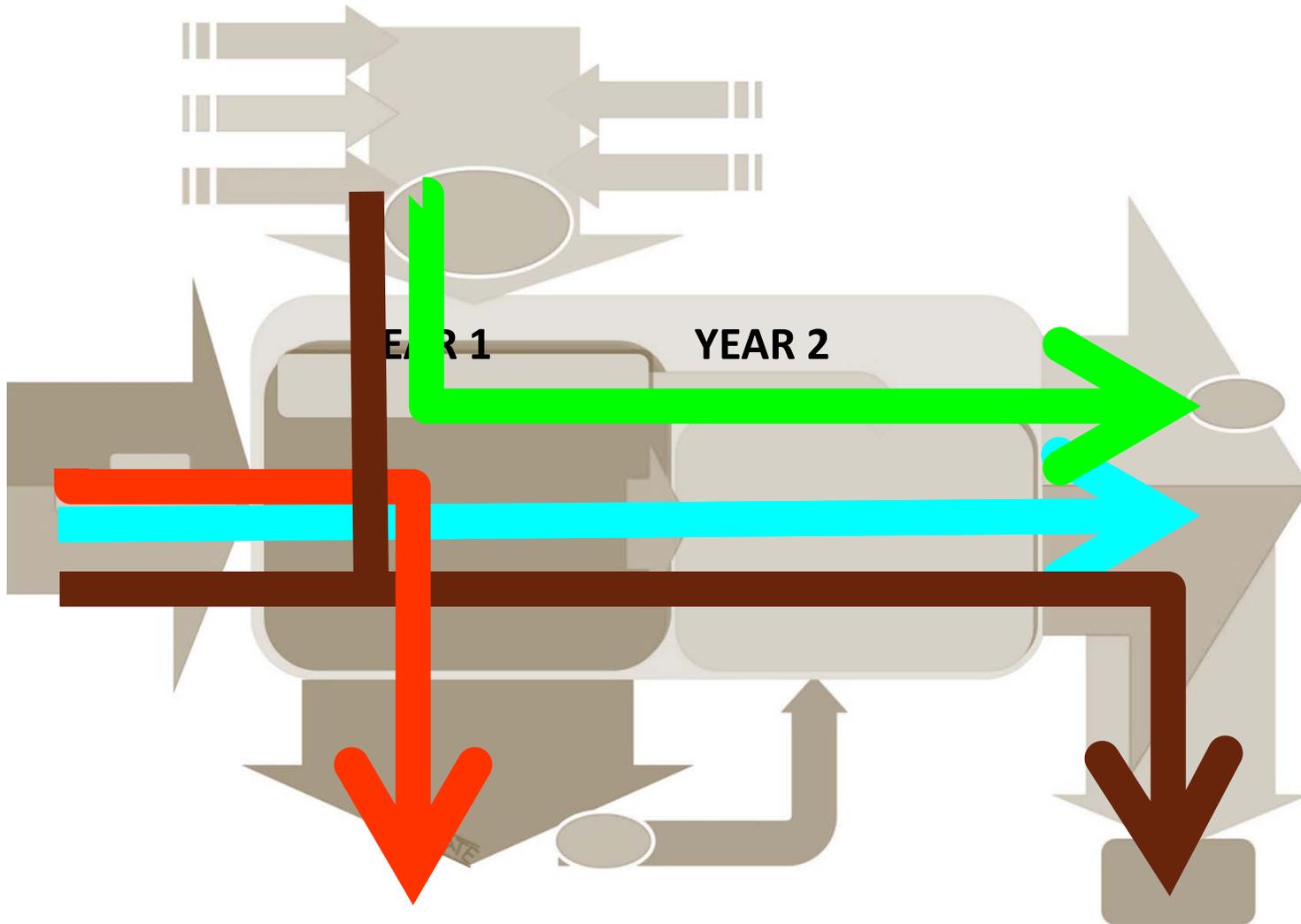


BS Applied Science or BS Eng Tech



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A.S. Degree Engineering Technology Pathways





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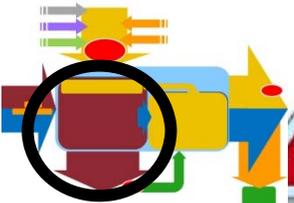
ET Degree Technical Core



Quality
 Safety
 Electronics
 Manufacturing Materials & Processes
 Mechanical Measurements & Instrumentation
 Computer Aided Drafting



Engineering Technology
 Support Certificate (18 Cr)
*Prepared to take MSSC
 Certification Exams)*





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ET Degree Technical Core



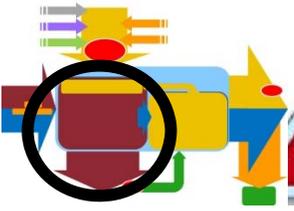
Quality
 Safety
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 Mechanical Measurements & Instrumentation
 Computer Aided Drafting



Engineering Technology
 Support Certificate (1500)
 Prepared to take
 Certification Exams

National Certification

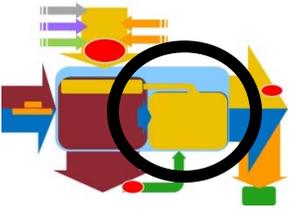
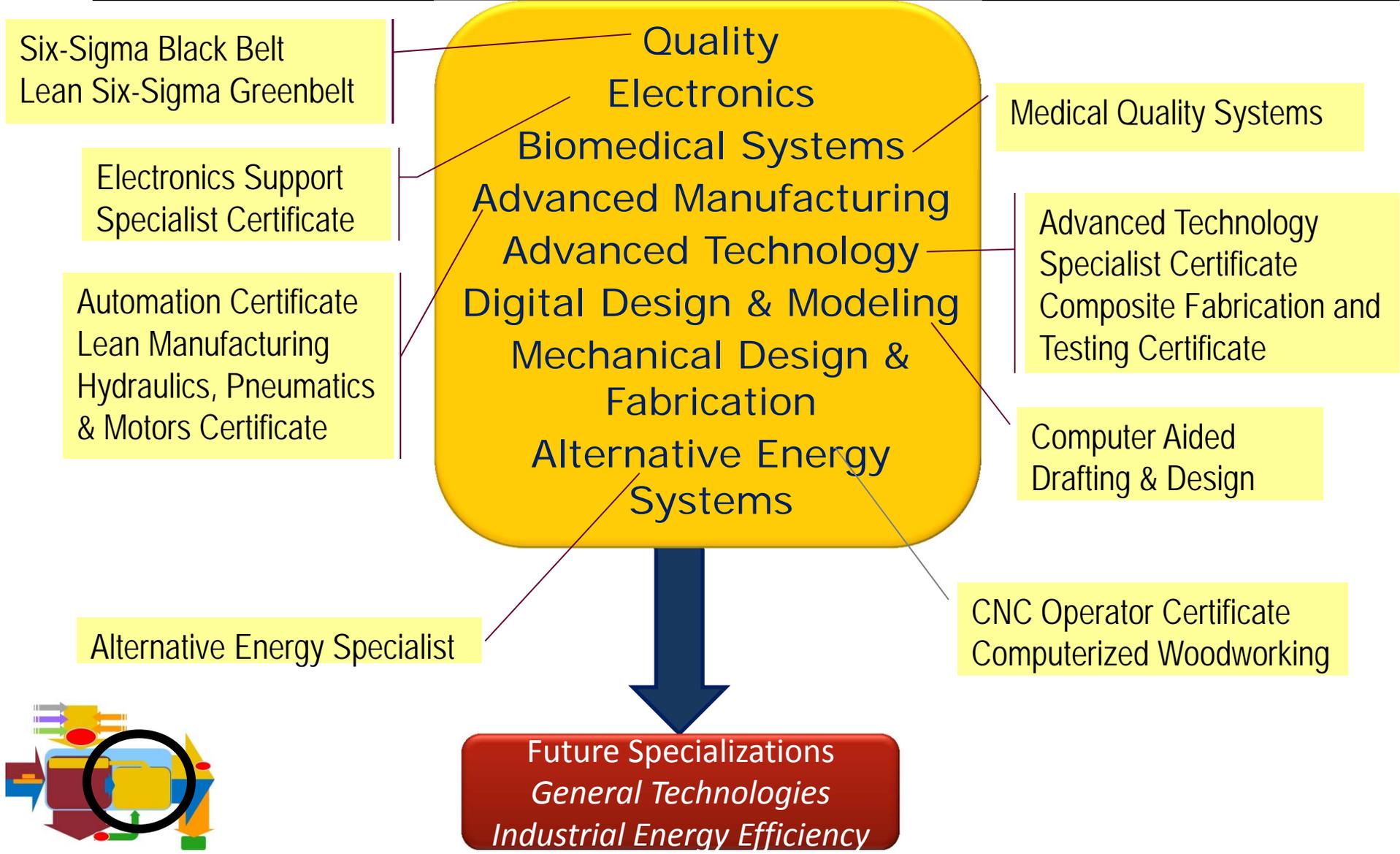
Academic Credential





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ET Degree Specializations & Credit Certificates

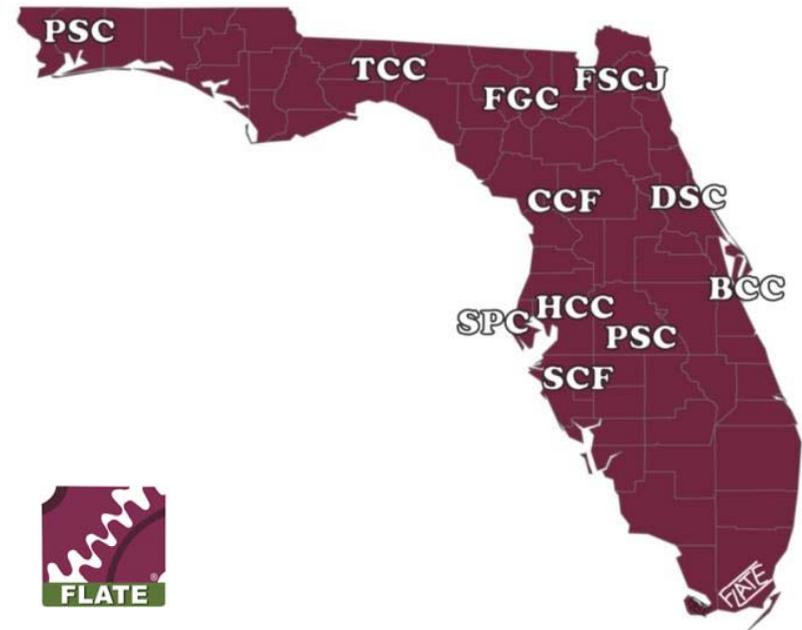




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Florida Engineering Technology Network

| SPECIALIZATION | COLLEGES | LOCATIONS | SPECIALIZATION | COLLEGES | LOCATION |
|------------------------|--------------------------|--|---------------------------|--------------------------|---|
| Quality | CCF FGC SPC TCC | Ocala Lake City St. Pete Tallahassee | Digital Design & Modeling | SPC TCC CCF SCF | St. Pete Tallahassee Ocala Bradenton |
| Electronics | SPC BCC SCF | Bradenton Palm Bay St. Pete | Alt Energy Systems | BCC TCC CCF | Palm Bay Tallahassee Ocala |
| Advanced Manufacturing | FSC HCC PSC TCC | Jacksonville Tampa Lakeland Tallahassee | | | |
| Fabrication & Design | FSCJ PSC TCC | Jacksonville Pensacola Tallahassee | | | |
| Advanced Technology | BCC TCC | Palm Bay Tallahassee | | | |
| Biomedical Systems | SPC | St. Pete | | | |





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Potential ET Degree – Credential Alignment

| SPECIALIZATION | | CREDENTIAL |
|----------------------------|---|------------|
| Quality | ↔ | ASQ SME |
| Electronics | ↔ | ETA |
| Advanced Manufacturing | ↔ | NFPA |
| Fabrication & Design | ↔ | NIMS |
| Advanced Technology | | |
| Biomedical Systems | | |
| Digital Design & Modeling | ↔ | SolidWorks |
| Alternative Energy Systems | | |

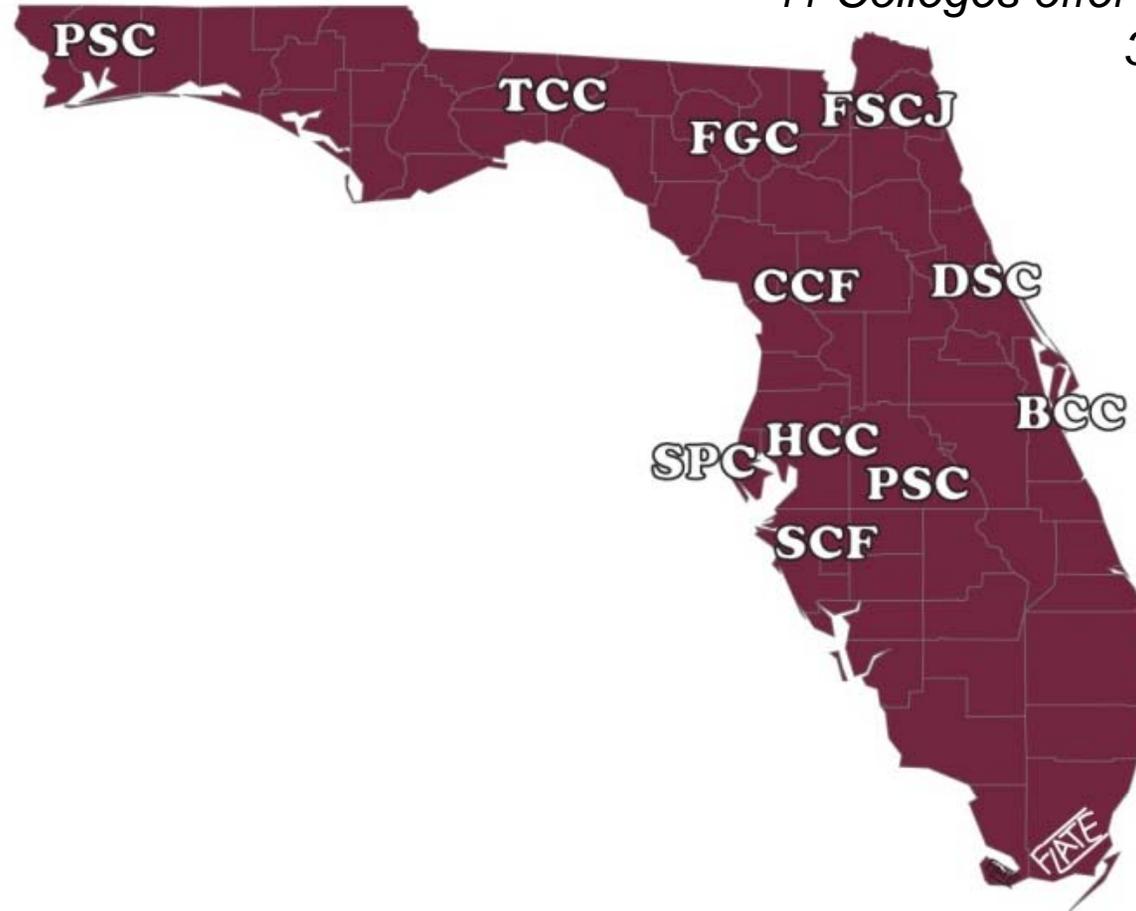




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FLATE's ET College Network

11 Colleges offer ET Degree & 35 certificates



Engineering Technology Education

At a Community College near you!

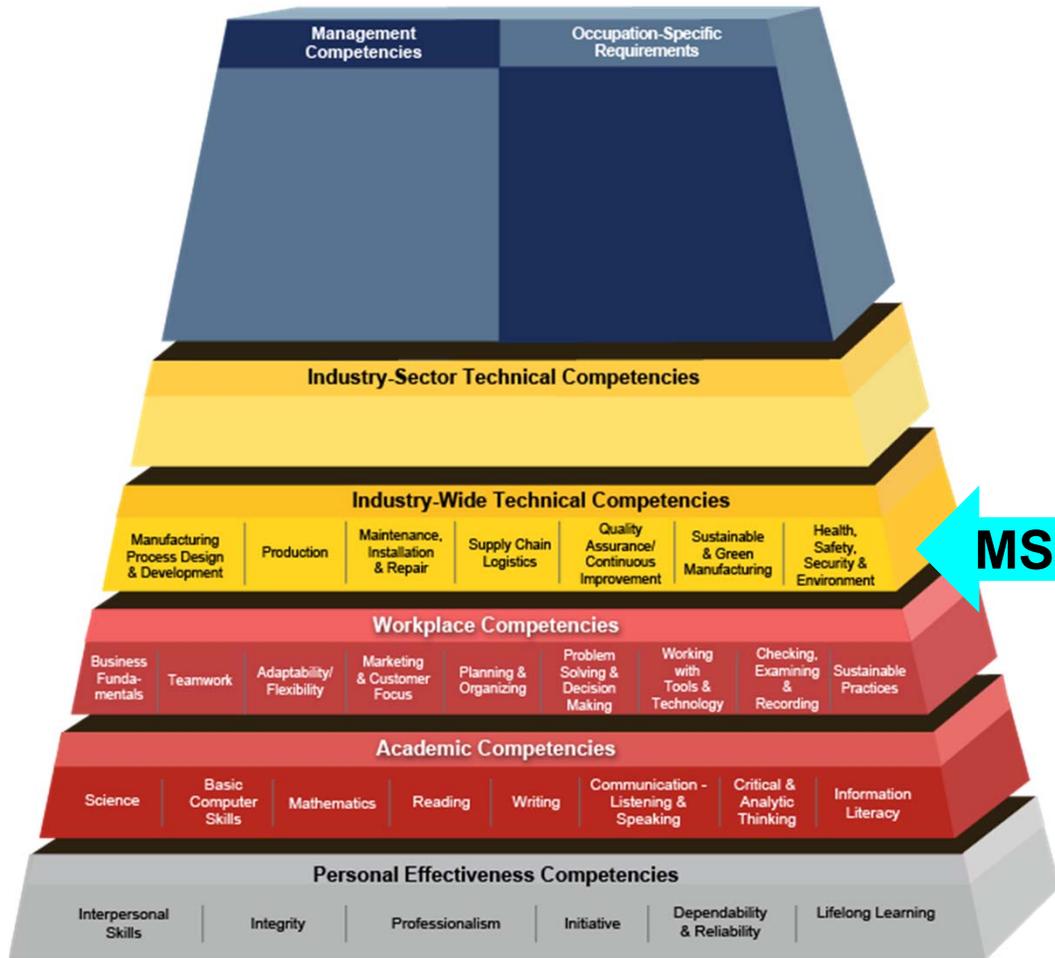
Good jobs, great pay, bright future





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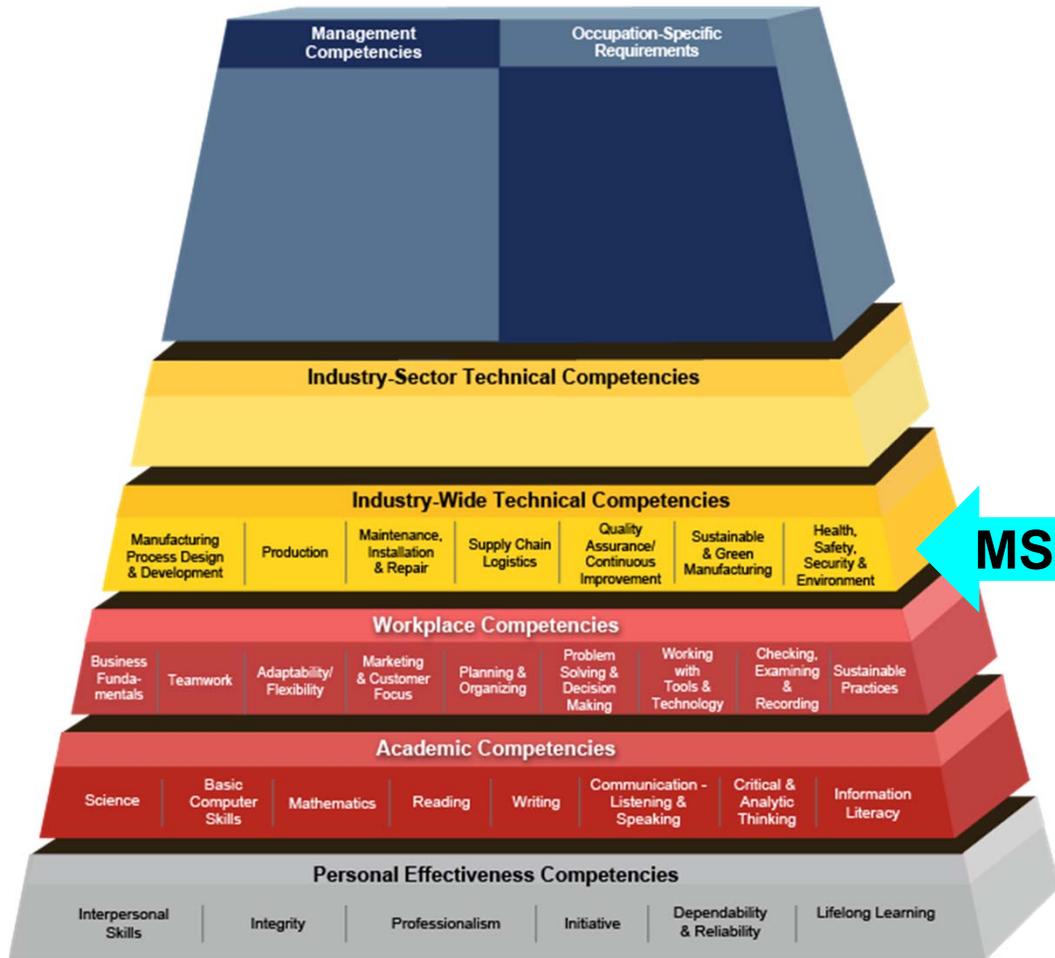
National Perspective





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National Perspective



MSSC



Career Paths – Life Long Learning



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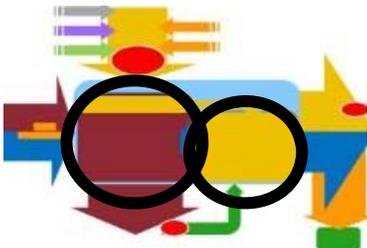
ET Degree – Credential Alignment



Education Path

Certification Path

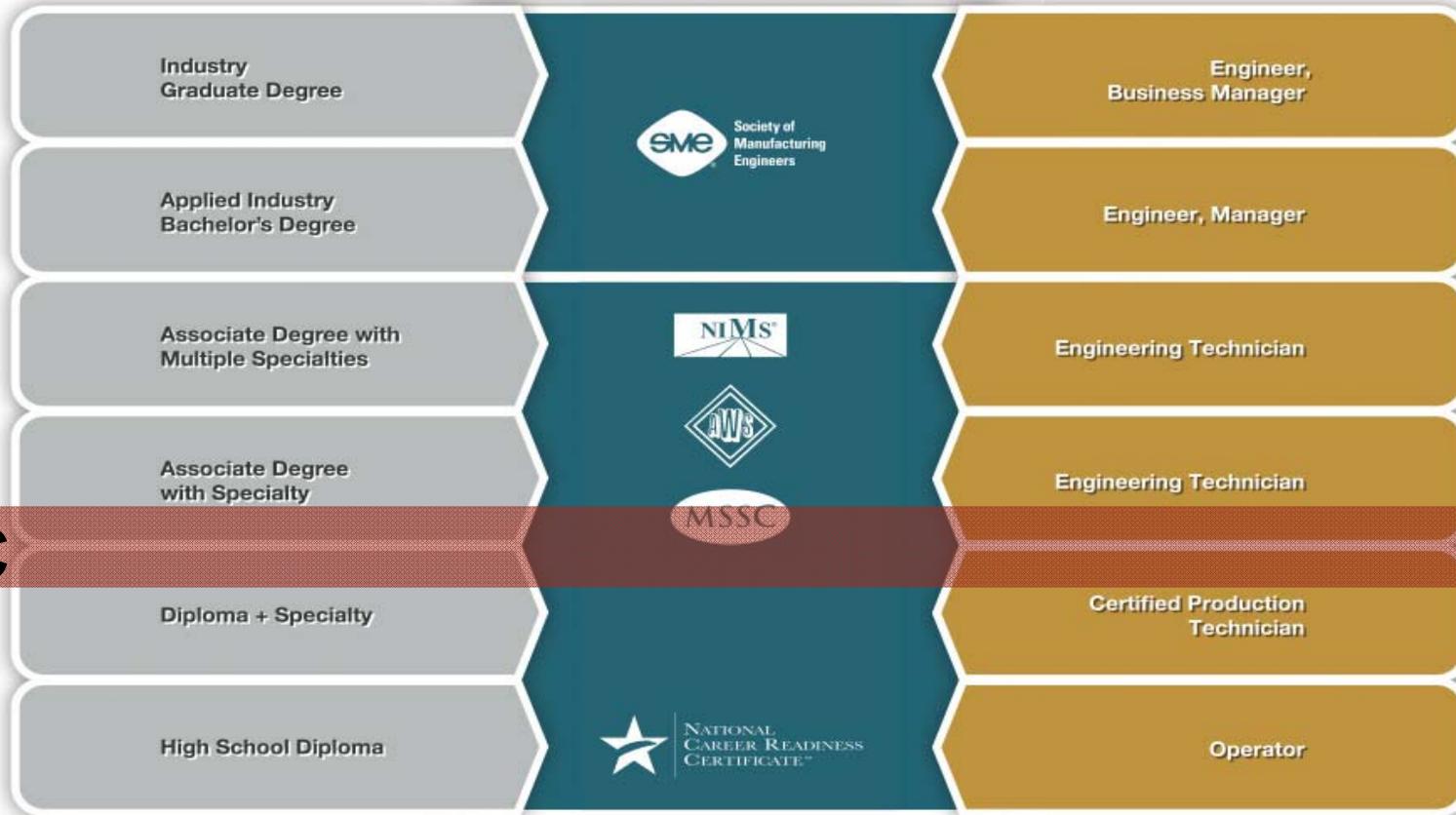
Career Path



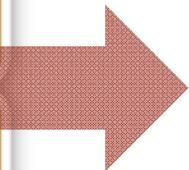


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ET Degree – Credential Alignment



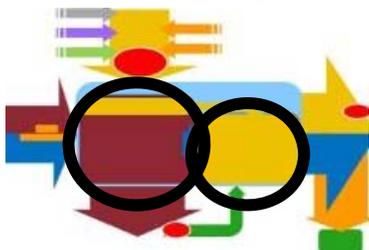
MSSC



Education Path

Certification Path

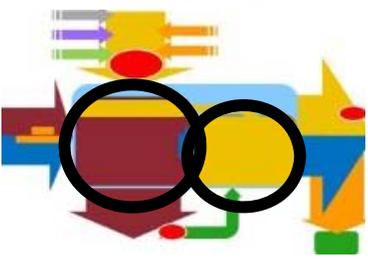
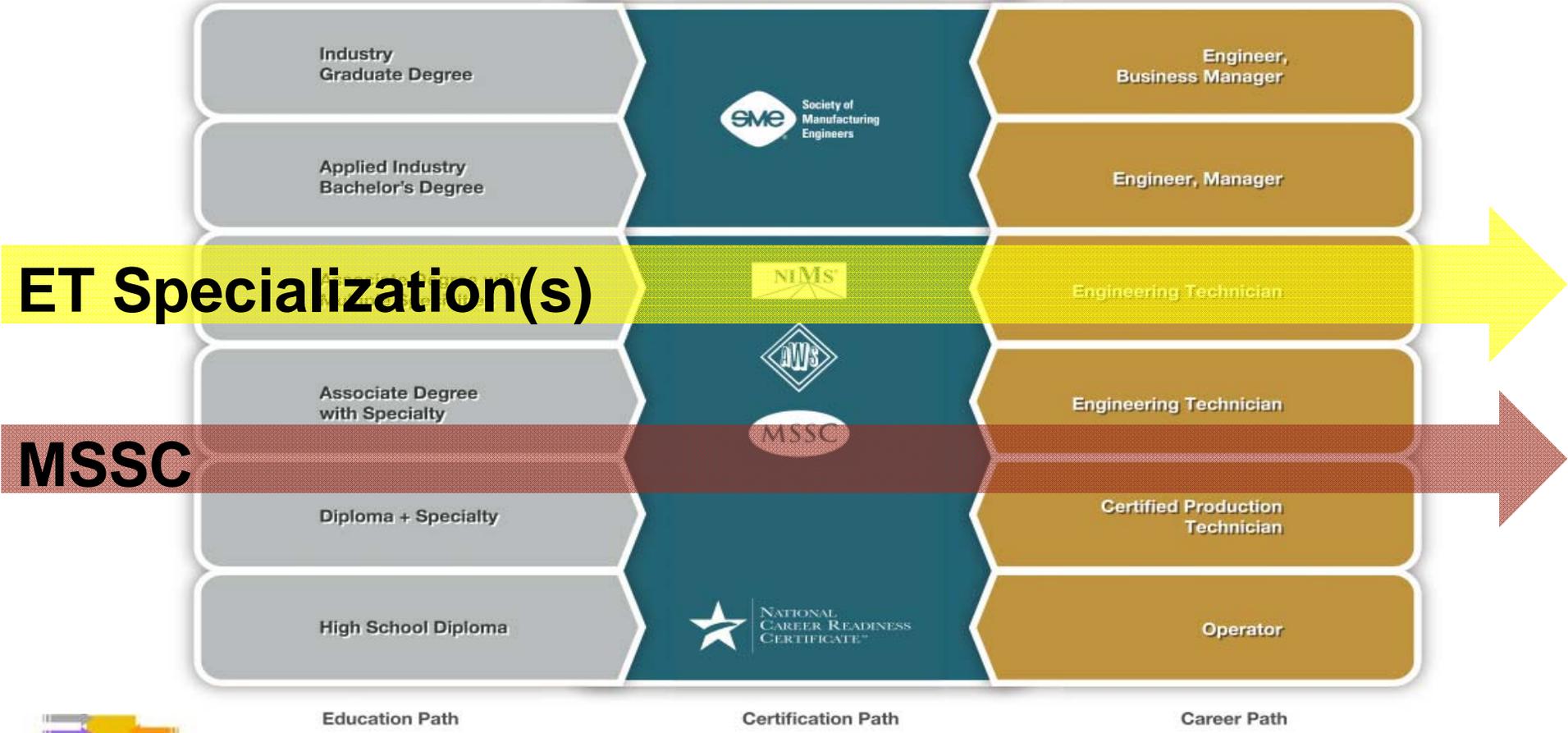
Career Path





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ET Degree – Credential Alignment





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ET Degree Skills Alignment Validation

Florida Department of Education
Curriculum Framework
July 2010

Program Title: Engineering Technology
Career Cluster: Manufacturing

| | AS | AAS |
|--------------------------------|--|-----------------|
| CIP Number | 161500001 | 061500001 |
| Program Type | College Credit | College Credit |
| Standard Length | 60 credit hours | 60 credit hours |
| CTSO | SallieUSA | SallieUSA |
| SOC Codes (all applicable) | 11-9111, 17-2031, 17-2051, 17-3012, 17-3013, 17-3019, 17-3023, 17-3026, 17-3027, 17-3028, 19-4021, 27-1001, 28-2012, 28-2071, 51-4012, 51-4013 | 11-0000 |
| Targeted Occupation List | http://www.fde.org | |
| Perkins Tech Skills Assessment | Perkins Tech Skills Assessment | |

Florida Curriculum Frameworks Standards (I)

BREVARD COMMUNITY COLLEGE
AEROSPACE TECHNOLOGY PROGRAM
Spring 2009

COURSE: ETIC 1830 MATERIALS AND PROCESSES I
PREREQUISITES: Introduction to Aerospace Workplace

CLASS TIME: Wednesdays 8:00- 10:45am
CLASSROOM: Cocoa Campus Bldg 14 Room 192
INSTRUCTOR: William Fletcher

CONTACT DATA:
Phone: 321-433-7751 (College) 321-543-3898 (Cell)
Office: Rm 132
Advisement: by appointment
Email: wfletcher@brevardcc.edu

TEXT:
1. Brandt, Daniel A., Warner, J...
IL: The Goodheart-Will...
2. Handouts from C...

COURSE DESCRIPTION:
...common materials and commodities used in the...
...incompatibility...
...chemical processes involved in metal treatments...
...degree of corrosion...
...and causes of metal fatigue...
...good and bad weld...

GRADING PROCEDURE:
The course grade will be a combination of the following components:

| | |
|---|------|
| Attendance/class participation | 10% |
| Homework | 10% |
| Quizzes | 15% |
| Individual Presentation | 20% |
| Midterm | 20% |
| Comprehensive Final (Two-hour written exam) | 25% |
| | 100% |

**Student outcomes:
course syllabus/text
books (II)**

External Standard (III)





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ET Degree Skills Alignment Validation

Florida Department of Education
Curriculum Framework
July 2010

Program Title: Engineering Technology
Career Cluster: Manufacturing

| | AS | AAS |
|--------------------------------|--|-----------------|
| CIP Number | 161500001 | 061500001 |
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| CTSO | SkillUSA | SkillUSA |
| SOC Codes (all applicable) | 11-9111, 17-2031, 17-2051, 17-3012, 17-3013, 17-3019, 17-3023, 17-3026, 17-3027, 17-3028, 19-4021, 27-1001, 28-2012, 28-2071, 51-4012, 51-4013 | 11-0000 |
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Florida Curriculum Frameworks (I)

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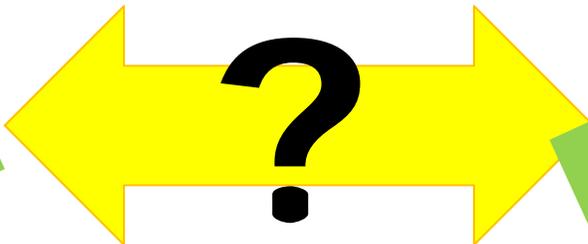
TEXT:
1. Brandt, Daniel A., Warner, J. L., et al. *Materials Science and Engineering: An Introduction*, 7th Edition, Wiley, 2006.
2. Handouts from Course

COURSE DESCRIPTION:
This course covers the properties and uses of common materials and commodities used in the aerospace industry. Topics include material compatibility, chemical processes involved in metal treatments, degree of corrosion, and causes of metal fatigue and failure. Good and bad welds will be discussed.

GRADING PROCEDURE:
The course grade will be a combination of the following components:

| | |
|----------------------------------|-------------|
| Attendance/Participation | 10% |
| Homework | 10% |
| Quizzes | 15% |
| Individual Projects | 20% |
| Midterm Exam | 20% |
| Course Final Exam (written exam) | 25% |
| Total | 100% |

Student outcomes: course syllabus/text books (II)



External Standard (III)

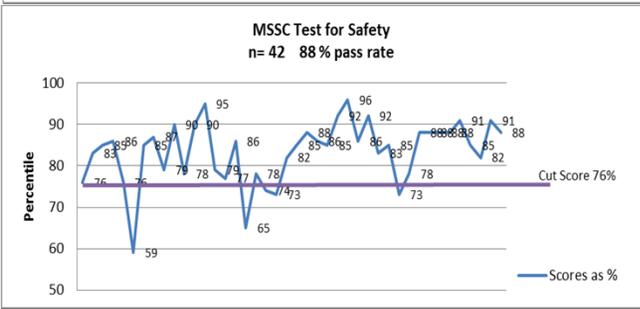
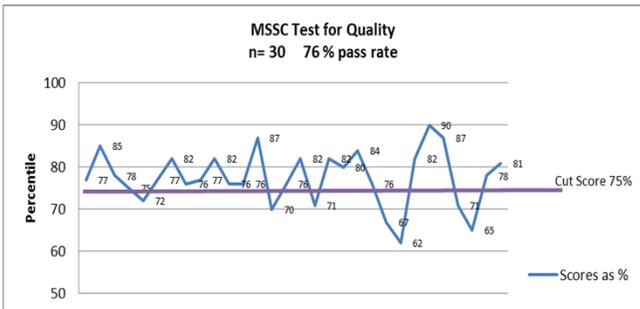




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ET Degree Skills Alignment Validation

STUDENT MSSC TESTING



Florida Advanced Technological Education Center of Excellence

MSSC/FLOE Frameworks/ ET Degree Technical Core Course Outcomes Alignment

These suggestions are the result of two ET Forum workshops addressing consistency in curriculum course outcomes which also meet MSSC assessment goals for Engineering Technology core courses aligned with MSSC Standards and FLOE Frameworks AAS/AS CIP Numbers: Engineering Technology (AAS - 0615.000001) (AS - 1615.000001).

In addition, the consensus among faculty was to structure the sequence of classes and testing as follows.

MSSC TEST ET Degree Courses Required/recommended before taking MSSC test

| | |
|---------------|---|
| Safety | Industrial Safety |
| Quality | (1) Quality (2) Measurement |
| Mfg Processes | (1) Safety, (2) Quality and (3) Manufacturing Processes |
| Maintenance | TRO (we did not get this far yet) |

ETI 1701/1720C Industrial Safety: Suggested Curriculum Course Outcomes to cover MSSC standards
In this course, students will encounter a comprehensive view of industrial processes and materials properties, employee activities, and facility operations leading to a safe and productive modern manufacturing workplace.

- Identify safety policies and regulations, safety training, personal safety practices, and teamwork skills that enhance workplace safety and safe operator performance in a modern manufacturing environment.
FLOE 01.0, 04.0, 08.0, 10.0, 11.0
MSSC WORK 1, 2, 3, 4, 6
MSSC WORKER Safe and Productive Workplace, Personal Safety Practices, Safety Policies and Regulations, Safety Training, Communication Skills that Enhance Safety, Teamwork Skills that Enhance Safety
- Describe information used in the high-performance, safety-conscious modern manufacturing workplace to train employees in safety procedures and practices, safe materials handling, responding to workplace hazards and emergencies, industrial hygiene, and environmental safety requirements.
FLOE 01.0, 04.0, 08.0, 10.0, 11.0
MSSC WORK 1, 2, 3, 4, 6
MSSC WORKER Safe and Productive Workplace, Safety Procedures, Personal Safety Practices, Safety Policies and Regulations, Safety Training, Teamwork Skills that Enhance Safety, Training Skills that Enhance Safety
- Describe corrective action for unsafe workplace conditions.
FLOE 08.0, 09.0, 08.0, 11.0
MSSC WORK 2, 3, 4, 8, 9
MSSC WORKER Safety Procedures, Personal Safety Practices, Safety Policies and Regulations, Safety-related Maintenance Procedures, Safety Training, Training Skills that Enhance Safety
- Describe manufacturing facility safety practices and procedures for safe materials and equipment handling (including electricity, fire, and hazardous materials).

This material is based upon work supported by the National Science Foundation under Grant No. 0828268. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

COMMON STUDENT OUTCOMES

ALIGNMENT CROSSWALK

WIDE Crosswalk for Quality Practices & Measurement
Sample Page

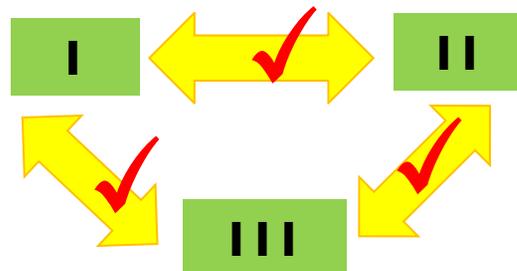
| FLOE Frameworks | 1. IDENTIFY SAFETY POLICIES AND REGULATIONS, SAFETY TRAINING, PERSONAL SAFETY PRACTICES, AND TEAMWORK SKILLS THAT ENHANCE WORKPLACE SAFETY AND SAFE OPERATOR PERFORMANCE IN A MODERN MANUFACTURING ENVIRONMENT. | 2. DESCRIBE INFORMATION USED IN THE HIGH-PERFORMANCE, SAFETY-CONSCIOUS MODERN MANUFACTURING WORKPLACE TO TRAIN EMPLOYEES IN SAFETY PROCEDURES AND PRACTICES, SAFE MATERIALS HANDLING, RESPONDING TO WORKPLACE HAZARDS AND EMERGENCIES, INDUSTRIAL HYGIENE, AND ENVIRONMENTAL SAFETY REQUIREMENTS. | 3. DESCRIBE CORRECTIVE ACTION FOR UNSAFE WORKPLACE CONDITIONS. | 4. DESCRIBE MANUFACTURING FACILITY SAFETY PRACTICES AND PROCEDURES FOR SAFE MATERIALS AND EQUIPMENT HANDLING (INCLUDING ELECTRICITY, FIRE, AND HAZARDOUS MATERIALS). |
|--|---|---|--|--|
| 1.1 DEMONSTRATE EMPLOYABILITY SKILLS | | | | |
| 1.2 DEMONSTRATE AN UNDERSTANDING OF WORKING BUSINESS PRACTICES AND STANDARDS | | | | |
| 1.3 DEMONSTRATE APPROPRIATE MATH SKILLS | | | | |
| 1.4 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS | | | | |
| 1.5 DEMONSTRATE APPROPRIATE TECHNICAL SKILLS | | | | |
| 1.6 DEMONSTRATE PROFICIENCY IN USING TOOLS, INSTRUMENTS AND TESTING DEVICES | | | | |
| 1.7 DEMONSTRATE PROFICIENT USE OF QUALITY ASSURANCE METHODS, QUALITY CONTROL CONCEPTS | | | | |
| 1.8 DEMONSTRATE PROFICIENT USE OF SAFETY HEALTH AND ENVIRONMENTAL REQUIREMENTS | | | | |
| 1.9 DEMONSTRATE AN UNDERSTANDING OF ELECTRONICS AND ELECTRICITY | | | | |
| 1.10 DEMONSTRATE A FUNDAMENTAL UNDERSTANDING OF INTERMEDIATE COMPUTATIONAL PHENOMENA | | | | |
| 1.11 DEMONSTRATE KNOWLEDGE OF INDUSTRIAL PROCESSES AND MATERIALS PROPERTIES | | | | |
| 1.12 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.13 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.14 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.15 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.16 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.17 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.18 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.19 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |
| 1.20 DEMONSTRATE AN UNDERSTANDING OF THE SCIENCE AND TECHNOLOGY OF MANUFACTURING PROCESSES AND THE QUALITY OF THE PRODUCTS | | | | |



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ET Degree Skills Alignment Validation

| ALIGNMENT | CODE | ELEMENTS |
|---|----------|---|
| FLDOE Curriculum Frameworks – MSSC standards | I ↔ III | Skills-standards alignment matrix |
| FLDOE Curriculum Frameworks – Course student outcomes | I ↔ II | <ul style="list-style-type: none"> • Common student outcomes • MSSC student testing |
| Course student outcomes – MSSC Standards | II ↔ III | <ul style="list-style-type: none"> • Common student outcomes • MSSC student testing |





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| MSSC TEST | Courses | N | % passed |
|---------------------------|---------------------------------------|----|----------|
| ✓ Safety | ETI 1701 - Industrial Safety | 42 | 88% |
| ✓ Quality | Intro to QC Intro to QA Quality | 30 | 76% |
| Mfg processes & materials | ETIC 1830 - Materials & Processes 1 | 29 | 69% |
| Maintenance awareness | <i>Coming in 2012</i> | | |

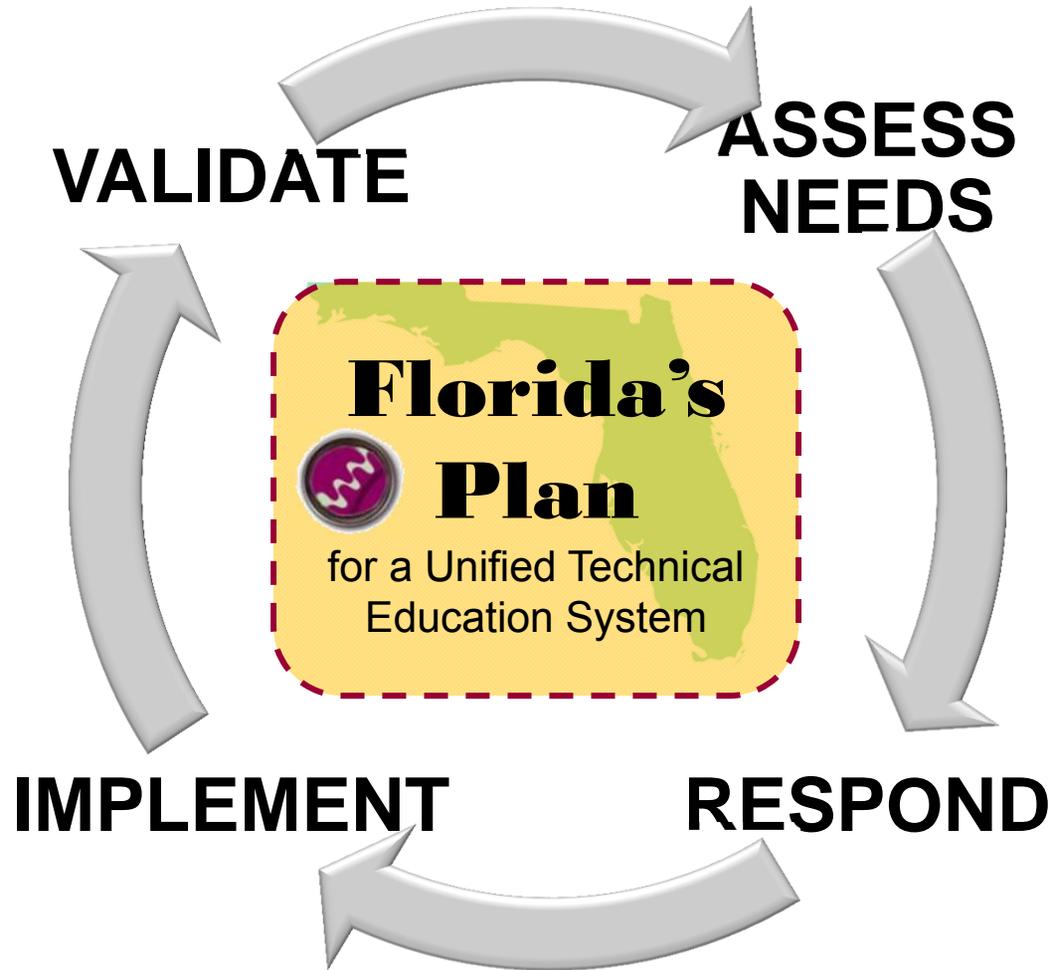
participating colleges
(2010-2012)

- Brevard
- Central Florida
- Hillsborough
- Polk State
- State College of FL



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FLATE's Role



Impact locally. Lead nationally.



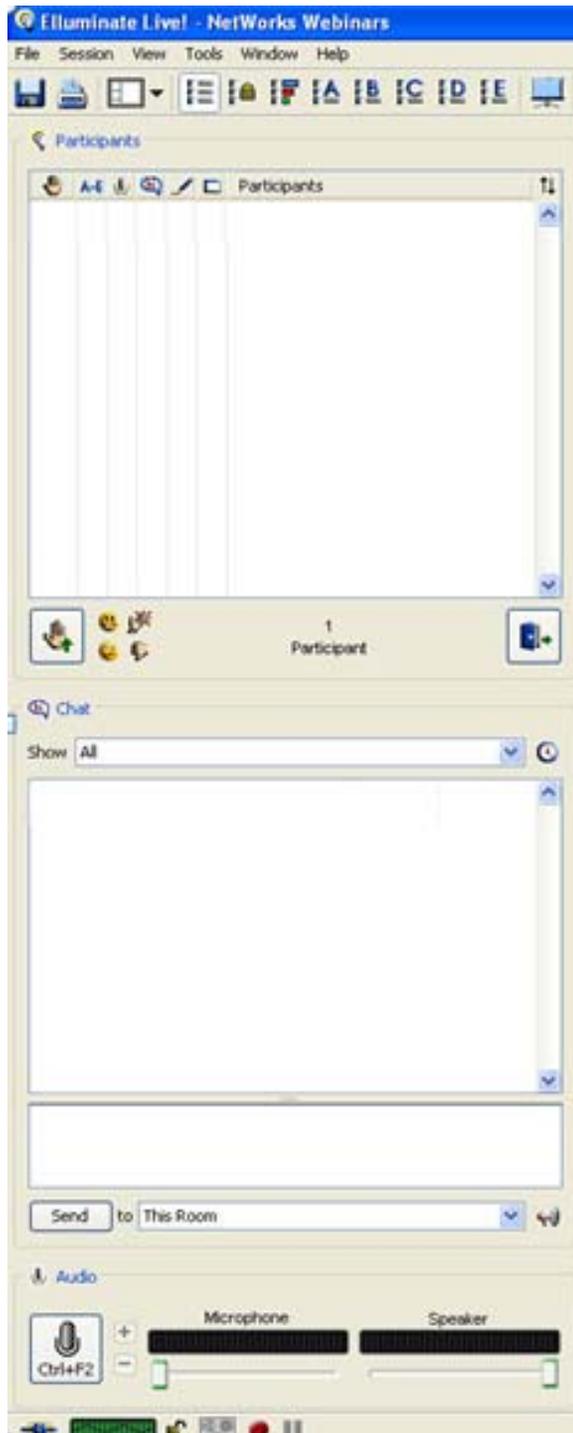
NETWORKS

Review of Objectives

Objective 1: Understand the credential landscape from certificates to degrees

Objective 2: Know the value-add of credentials from an industry perspective

Objective 3: Identify a promising practices model of credentialing at a major community college



Final Questions



NETWORKS

Presenters Contact Info

Dr. Marilyn Barger, *Executive Director/Principal Investigator*
FLATE
www.fl-ate.org
mbarger@hccfl.edu

Brent Weil, *Senior Director for Education and Workforce*
The Manufacturing Institute
www.themanufacturinginstitute.org
bweil@nam.org

Rosa Schmidt, *Education Consultant*
Center for Energy Workforce Development
rosaschmidt@optonline.net

Richard Gilbert, *College of Engineering, Chemical
& Biomedical Engineering*
FLATE – University of South Florida
www.fl-ate.org
gilbert@usf.edu



NETWORKS

Whether you are joining us live or watching the recorded version of this webinar, please take 1 minute to provide your feedback and suggestions.

<http://questionpro.com/t/ABkVkZLIc9>



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Webinar Resources

To access the recording and slides, visit

www.matecnetworks.org,

Keyword Search:

“Webinar Earning Credentials”



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From STEM to STEAM:
Importance of Arts in STEM

May 11:

NetWorks
Bridge to Technology

www.matecnetworks.org/growth.php



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shannon.payne@domail.maricopa.edu



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Thank You!

Thank you for attending the
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Earning Credentials