



# The “Florida Plan”

## Great Manufacturing Pathways that Work!

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P.I. and Executive Director, FLATE

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# National Science Foundation (NSF) Advanced Technological Education (ATE)



*Partners with Industry  
for the NEXT American Workforce*



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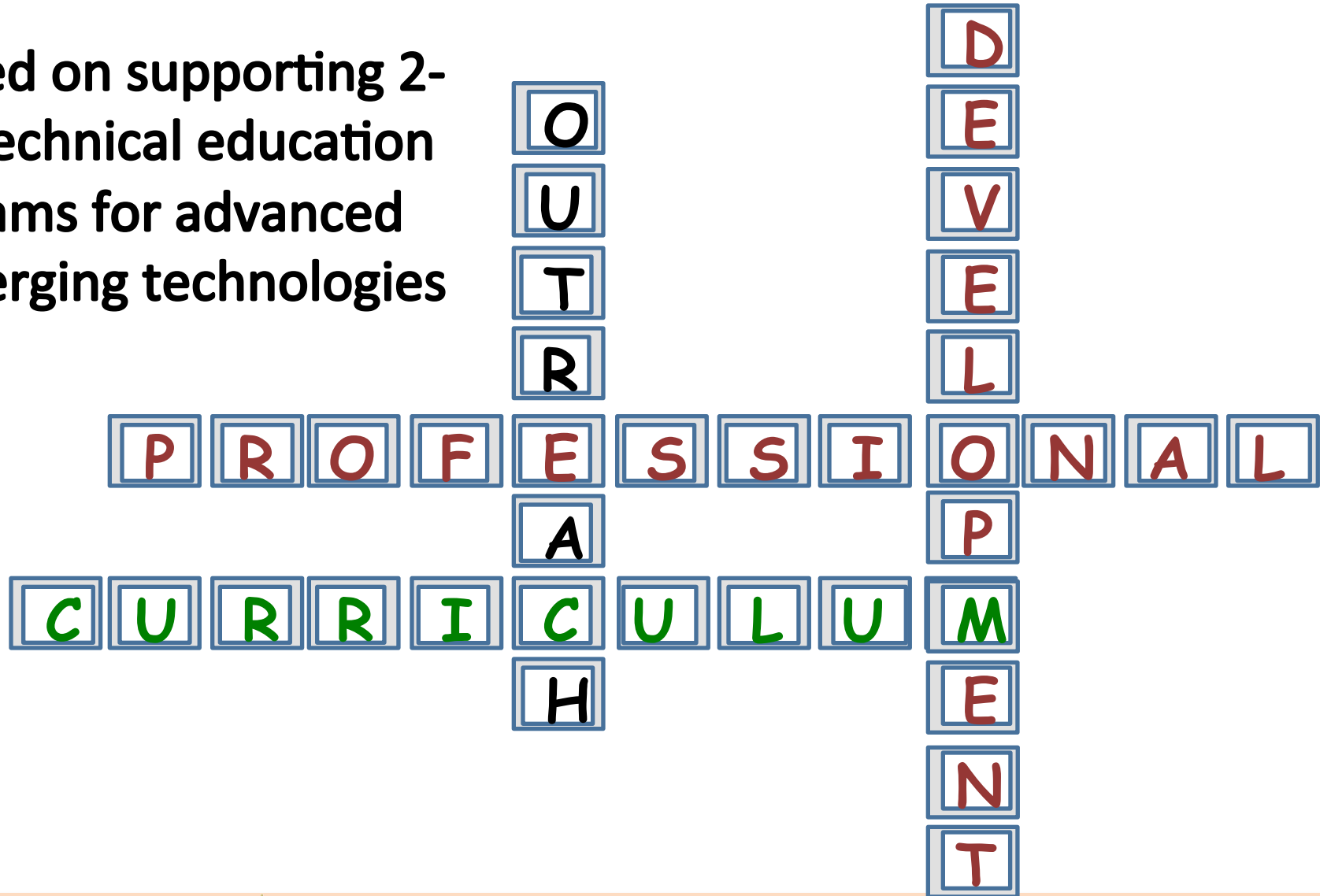
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2012 FCPW Symposium

# NSF ATE: Our Work

focused on supporting 2-year technical education programs for advanced & emerging technologies



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# NSF ATE Centers!



ADVANCED MANUFACTURING TECHNOLOGIES



AGRICULTURAL AND BIOLOGICAL TECHNOLOGIES



ENERGY & ENVIRONMENTAL TECHNOLOGIES



ENGINEERING TECHNOLOGIES



INFORMATION TECHNOLOGIES



LEARNING, EVALUATION & RESEARCH



MICRO & NANO TECHNOLOGIES



SECURITY TECHNOLOGIES



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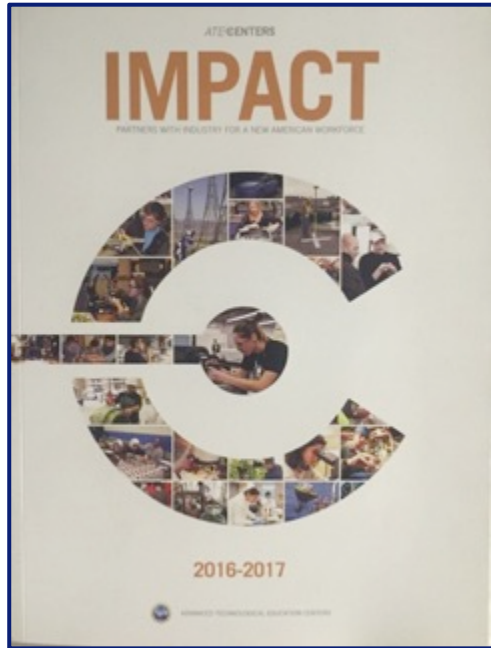
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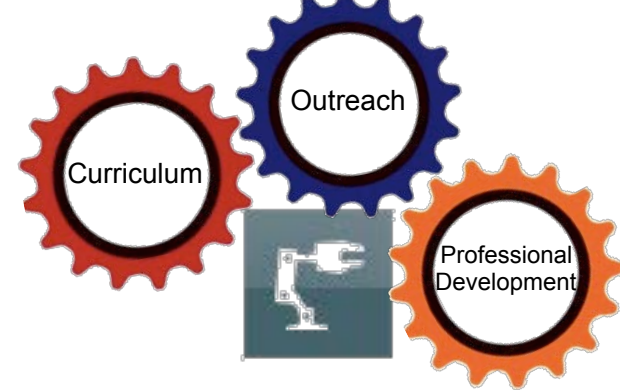


[www.atecenters.org](http://www.atecenters.org)

[atecentral.net/ate20/](http://atecentral.net/ate20/)

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# VISION

***FLATE** will be Florida's leading resource for education and training expertise, leadership, projects, and services to promote and support the workforce in the high performance production and manufacturing community.*



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# FLATE: Our Work



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# Understanding Advanced Manufacturing



**600,000** → **2,000,000**

2013

projection for 2020

# Unfilled high-skill high-wage manufacturing **JOBS**

# why?

The US faces a chronic shortage in STEM competencies as the demand for STEM talents grows.

People with lower levels of education in STEM make more than people with higher levels of education in non-STEM.

**63%** of Associate's degrees in STEM earn more than Bachelor degrees in many *non*-STEM occupations.



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# Why Manufacturing? EXCITING CAREERS

## New Factory Tech Will Boost Future Jobs Growth

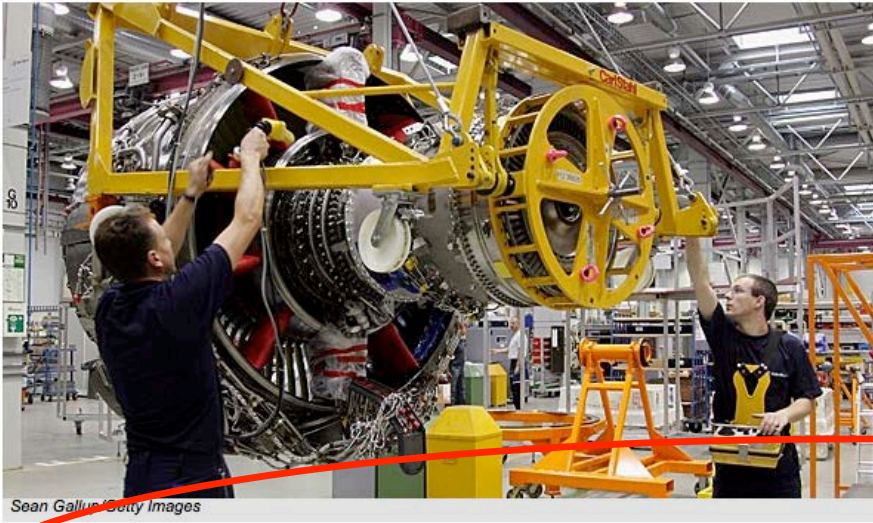
Agence France-Presse

Mar 9, 2015

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The Future of Work conference looked at how technological advancements are changing the shape and even existence of traditional workplaces.



Sean Gallup/Getty Images

LONDON - New technologies are capitalizing on the jobs market and in the workplace, said Arianna Huffington and Google executive chairman Eric Schmidt at a London conference.

The Future of Work conference, staged at Lancaster House, looked at how technological advancements are changing the shape and even existence of traditional workplaces.

'While there have been a lot of concerns about machines and technology replacing humans, when it comes to jobs, in fact we are seeing that technology is allowing an enormous amount of new jobs to emerge,' Huffington, editor-in-chief of The Huffington



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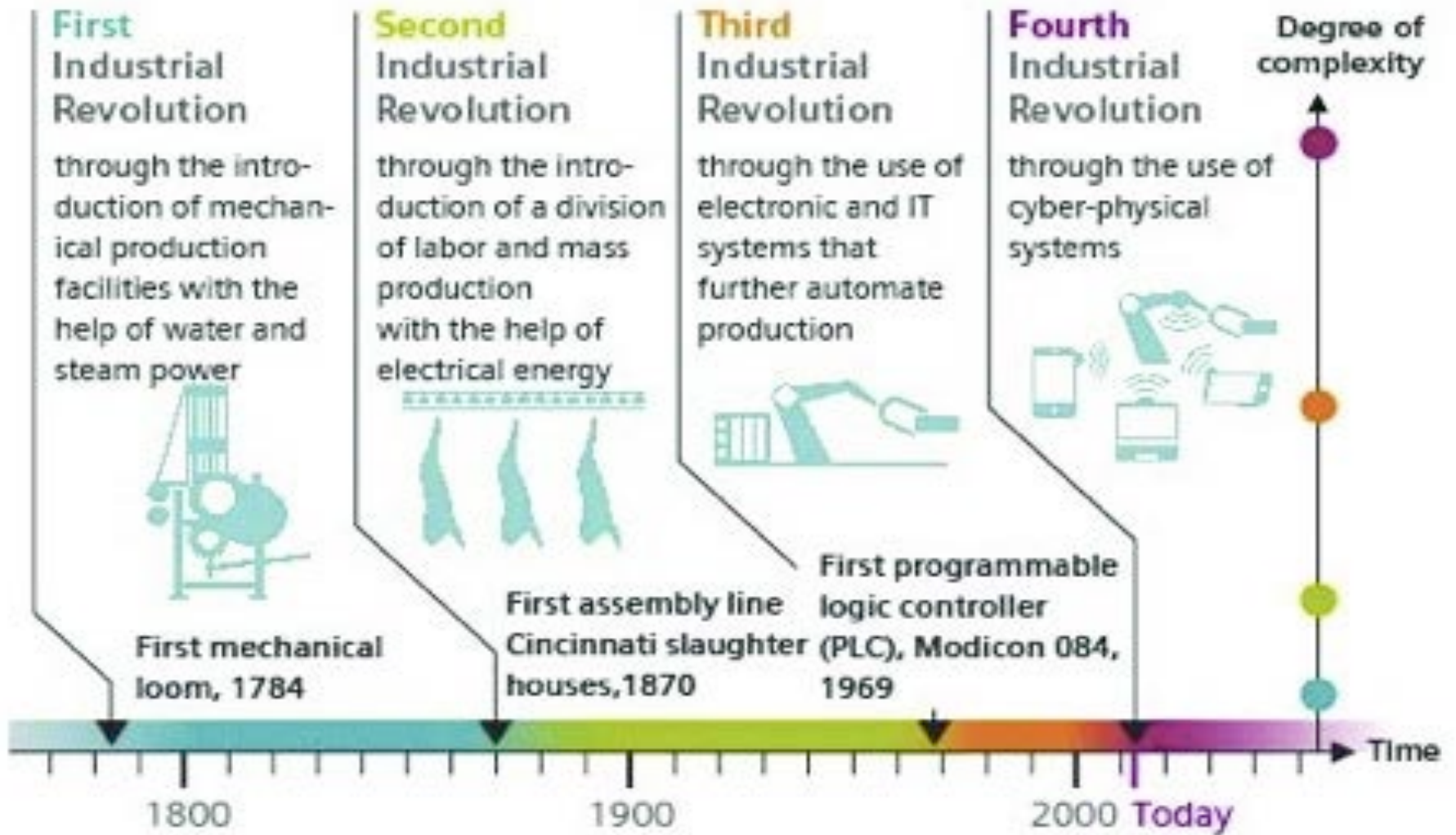
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# Why Manufacturing? **INDUSTRY 4.0**



# Why Manufacturing? ECONOMICS

- Florida Manufacturing Establishments: **>12,000**
- Manufacturing Employment: **>330,000**
- **\$37 billion** of the total state output
- Percent of Florida exports: **93%**
- Manufacturing Average Annual Compensation: **>\$63,000**  
(**>50%** higher than other sectors)

*Source: 2012 & 2013 US Bureau of Economic Analysis, US Bureau of Labor Statistics*

*Source: U.S. Bureau of Economic Analysis.*



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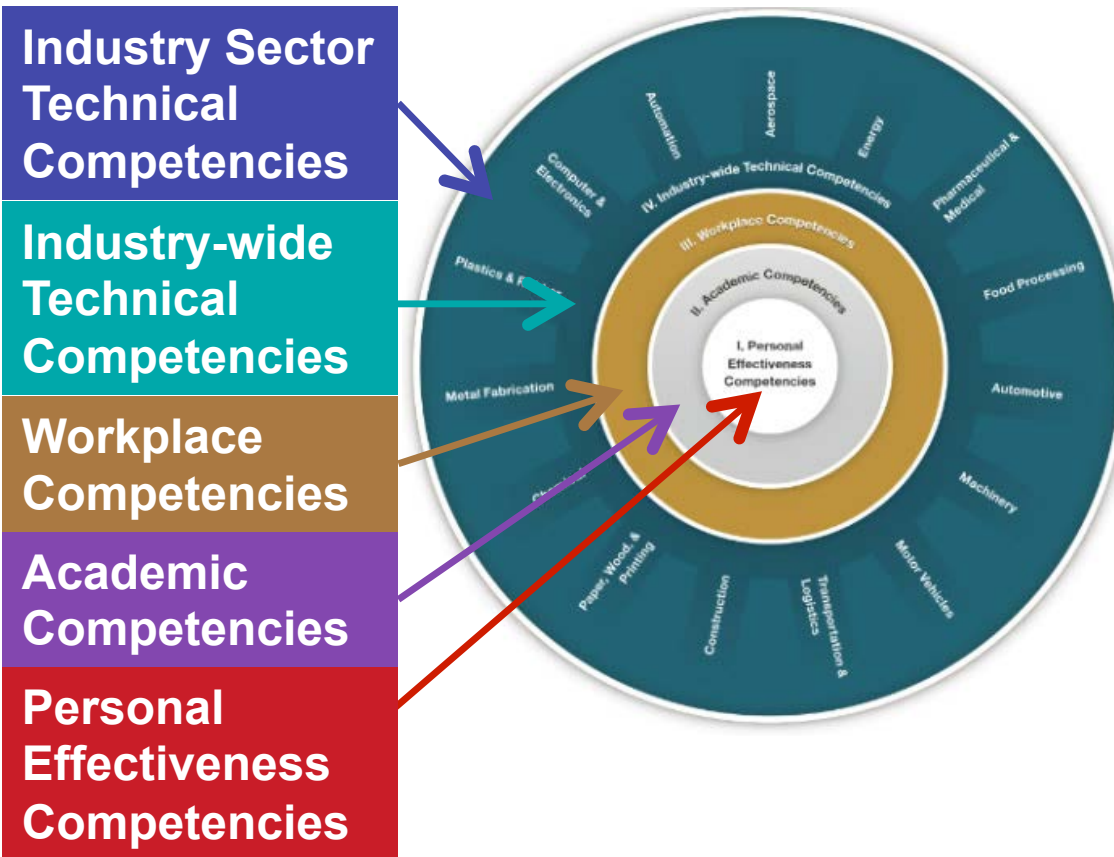
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# Advanced Manufacturing Technician Education

# National View: Advanced Manufacturing



- Automation
- Aerospace
- Energy
- Pharmaceuticals & Medical
- Food Processing
- Automotive
- Machinery
- Motor Vehicles
- Transportation & Logistics
- Construction
- Paper, Wood, & Printing
- Chemical
- Metal Fabrication
- Plastics & Rubber
- Computer & Electronics

# National View: Advanced Manufacturing

## US Department of Labor Competency Model for Advanced Manufacturing

Related other CMs:

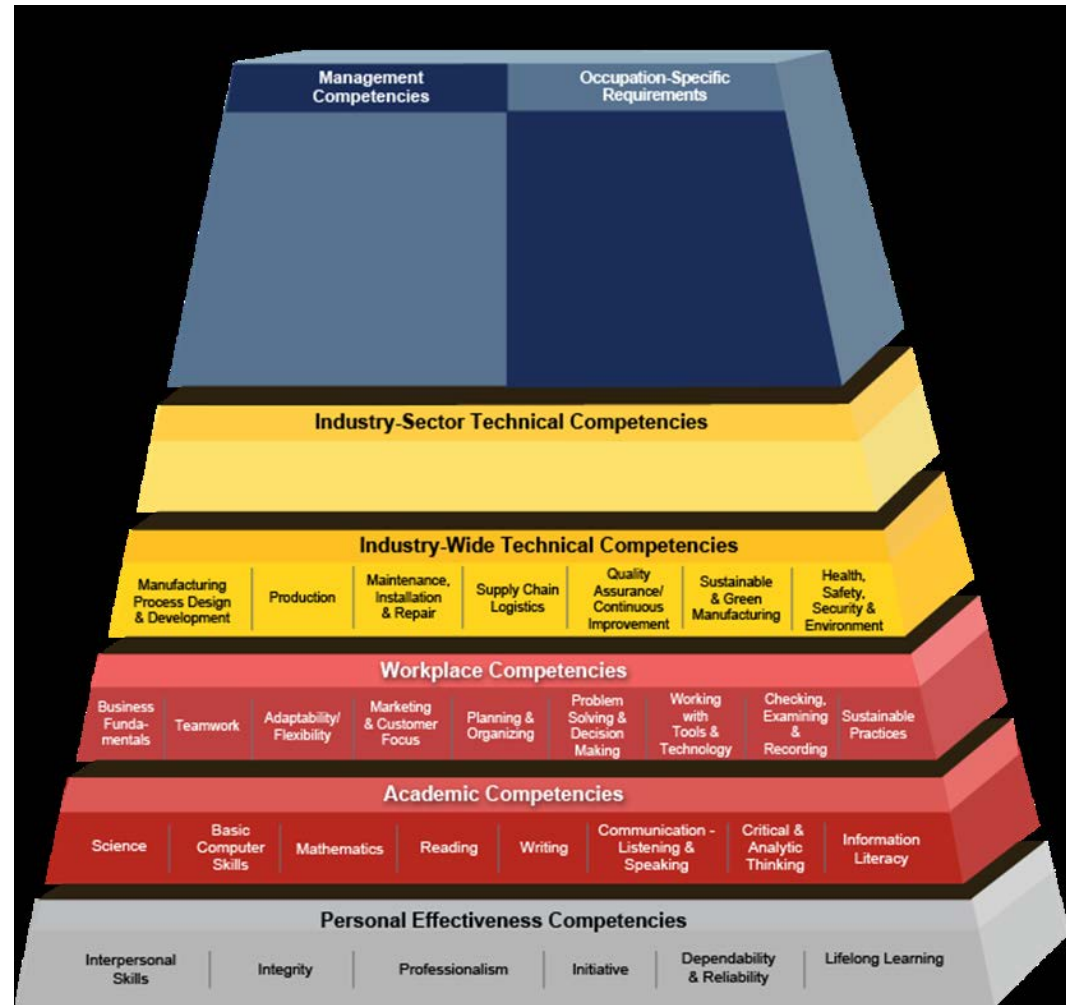
**Welding**

**Automation**

**Mechatronics**

**Energy**

*more*



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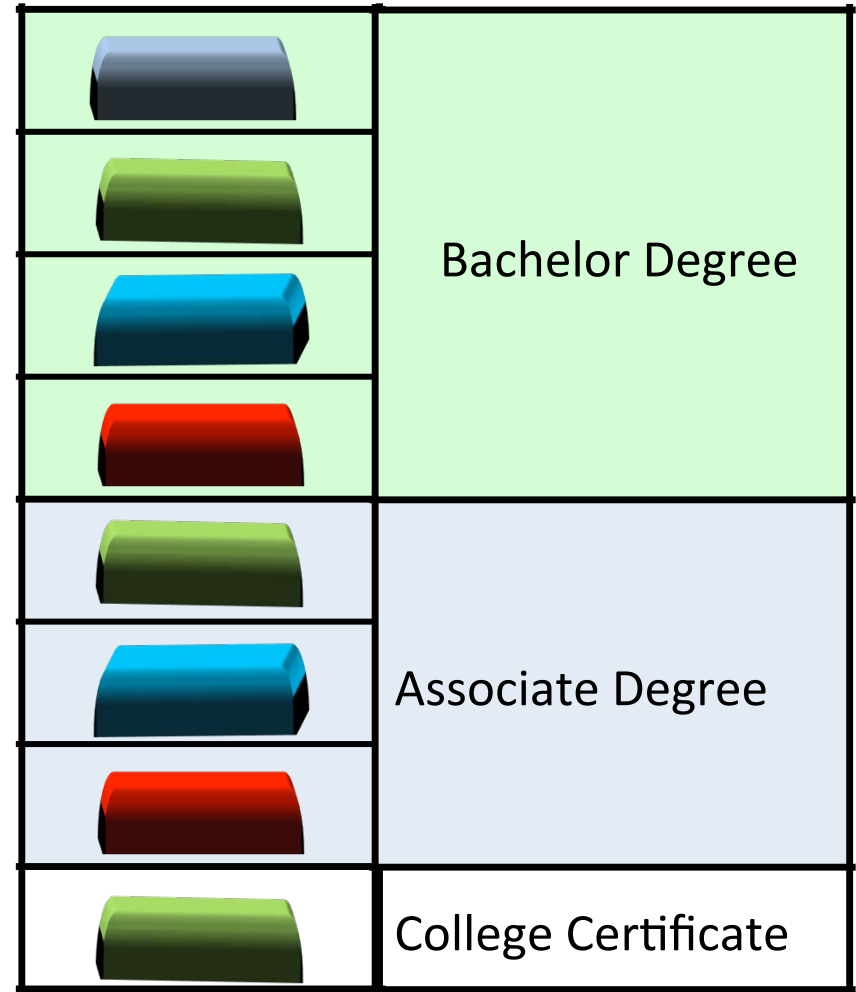
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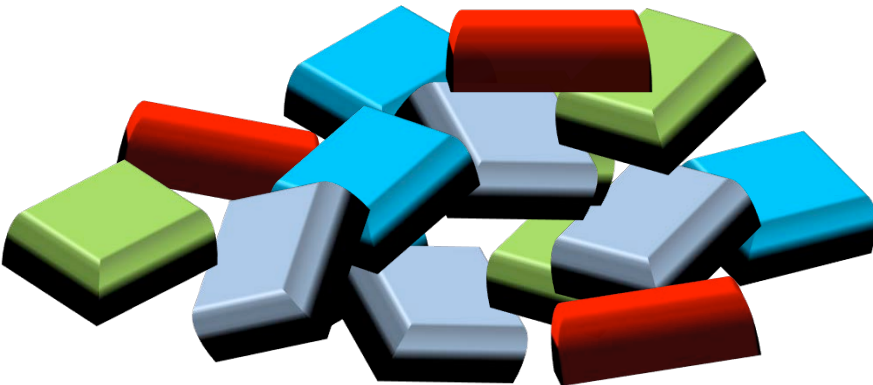
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# Stackable Credentials

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



 general education



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# Florida Engineering Technology AS Degree

## I. General Education – 15 - 18 credit hours

English	Science	Social Science
Math	Humanities	

## II. ET Core - 18 credit hours

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



## III. 11 Specialization Tracks: 24 to 27 credit hours

Advanced Manufacturing	Mechanical Design & Fabrication
Alternative Energy Systems	Electronics
Biomedical Systems	Digital Design & Modeling
Digital Manufacturing	Industrial Energy Efficiency
Advanced Technology	Quality
Protective Relay/Substation	

### 60 semester hours

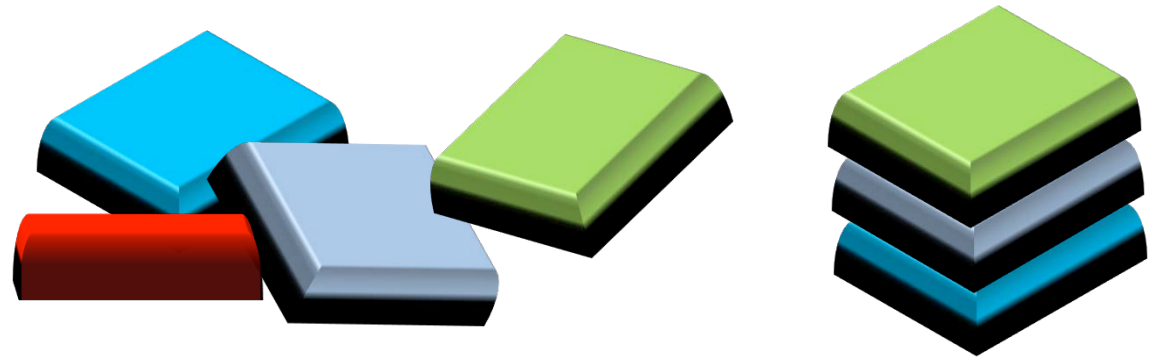




# Stackable Credentials



- be portable
- be accredited
- define clear career pathways
- keep industry alignment
- intertwining jobs and education



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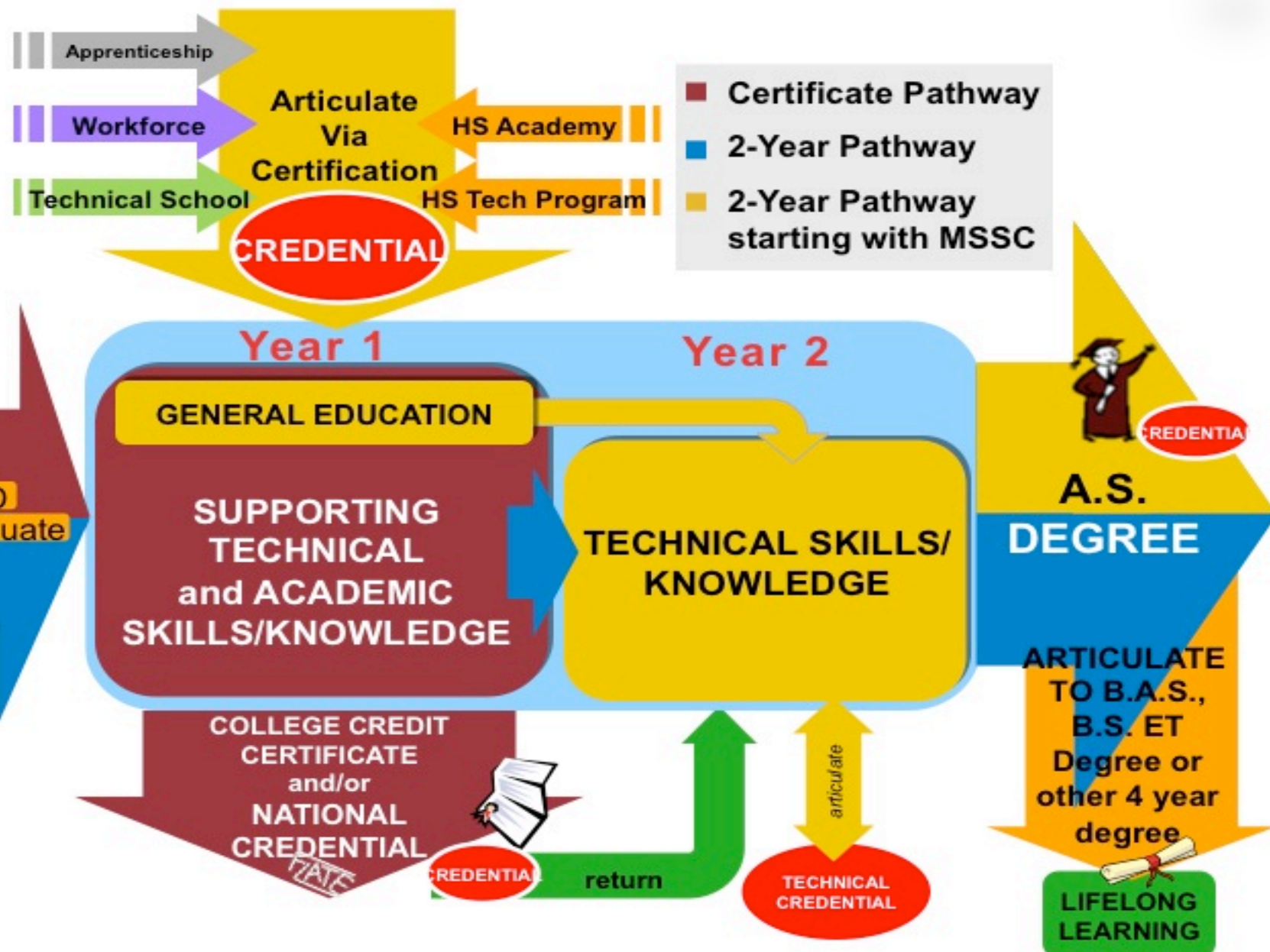
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# Florida Engineering Technology AS Degree



# Florida Engineering Technology AS Degree

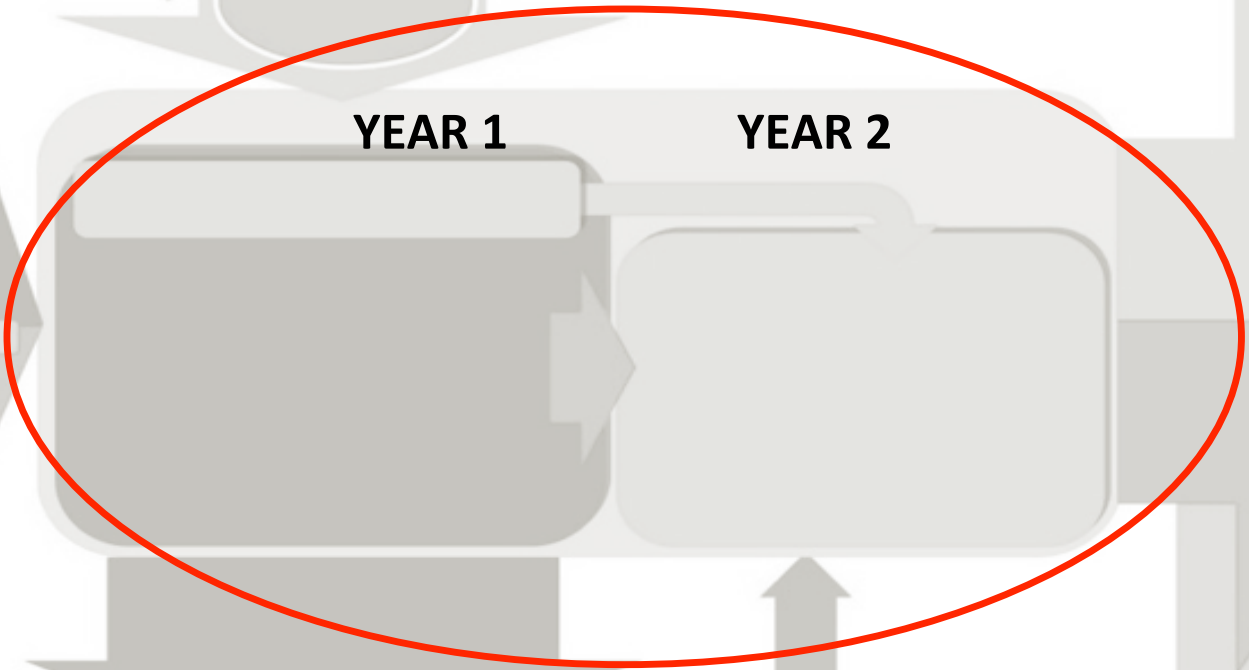


**WORKFORCE**

**CAREER HS**

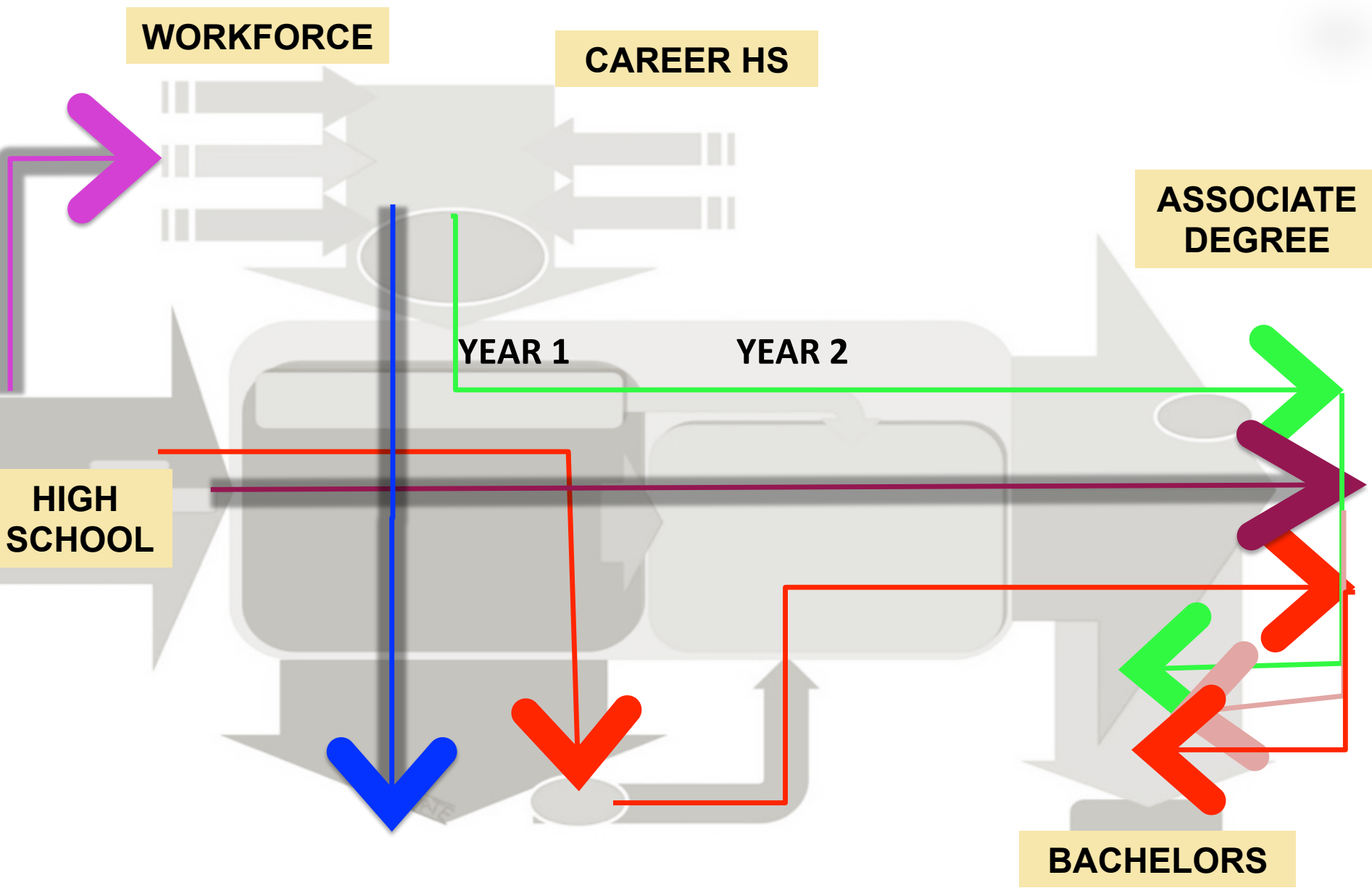
**ASSOCIATE  
DEGREE**

**HIGH  
SCHOOL**



**BACHELORS**

# Florida Engineering Technology AS Degree



# Florida Engineering Technology AS Degree



**Technical Core**

- Safety
- Quality
- Electronics
- Manufacturing Materials & Processes
- Measurements & Instrumentation
- Computer Drafting



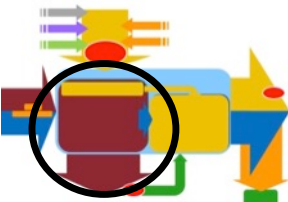
Engineering Technology Support Certificate (18 Cr)  
*Prepared to take MSSC Certification Exams*





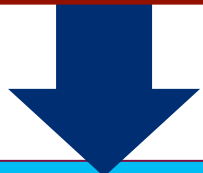


# Florida Engineering Technology AS Degree



**Technical Core**

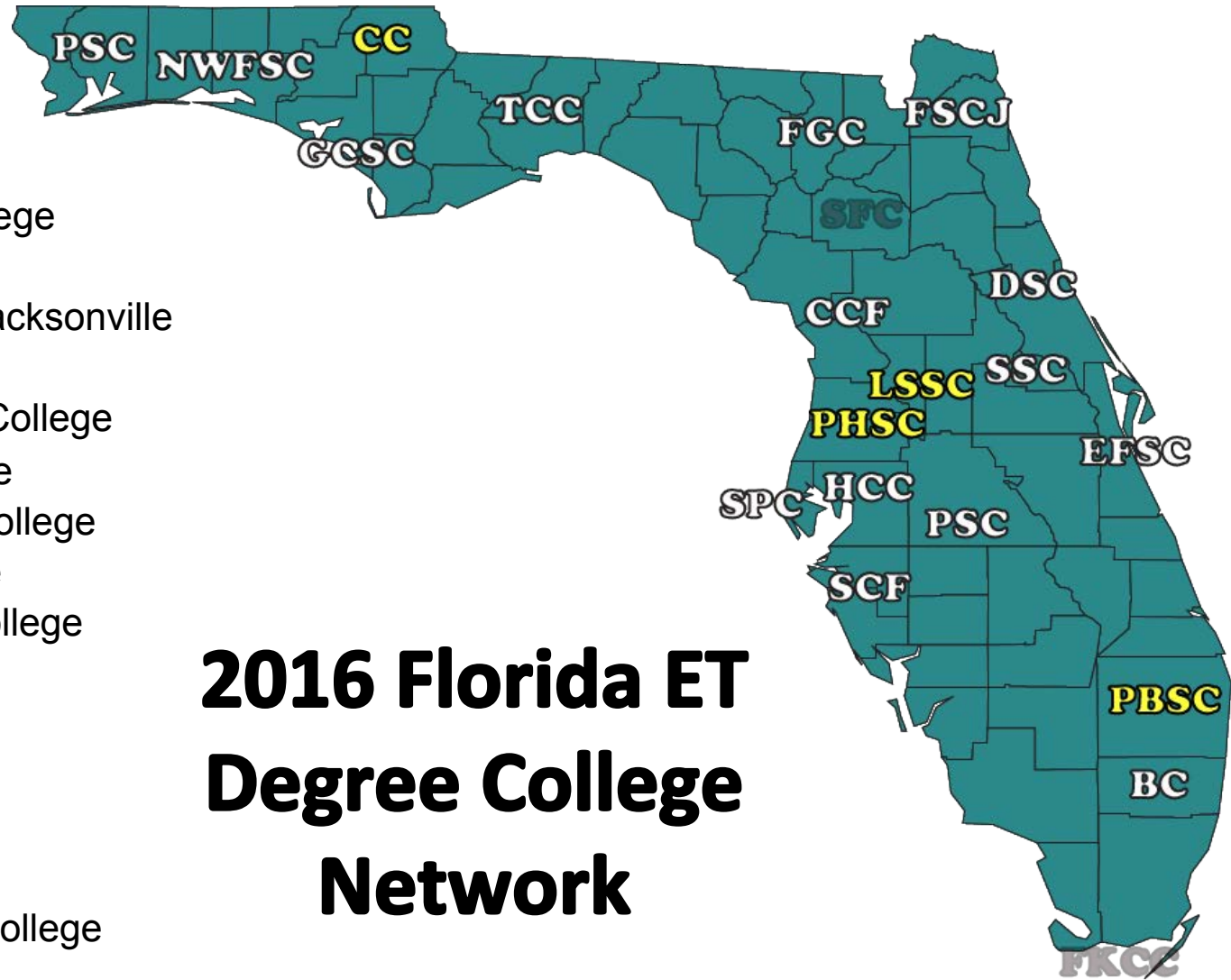
- Safety
- Quality
- Electronics
- Manufacturing Materials & Processes
- Measurements & Instrumentation
- Computer Drafting



Engineering Technology Support Certificate (ETSC)  
 Prepared to take (ETSC) Certification Exams  
**Academic Credential**

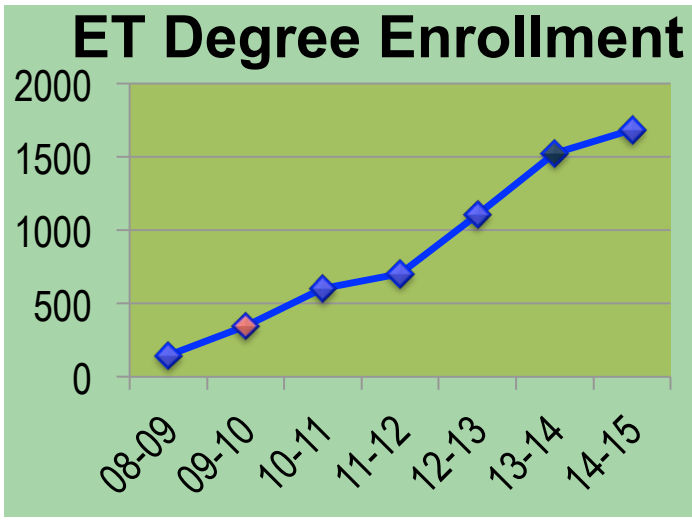
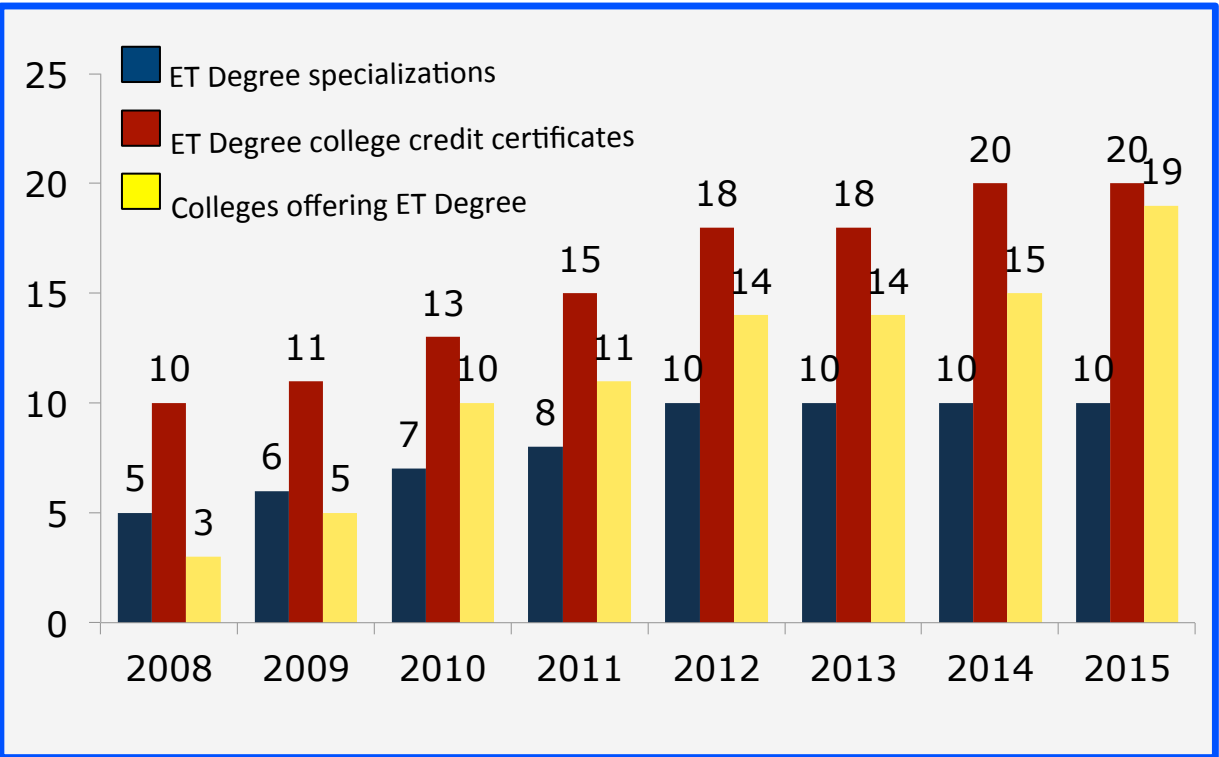
# Florida Engineering Technology AS Degree

Broward College  
Chipola College  
College of Central Florida  
Daytona State College  
Eastern Florida State College  
Florida Gateway College  
Florida State College at Jacksonville  
Gulf Coast State College  
Hillsborough Community College  
Lake Sumter State College  
Northwest Florida State College  
Palm Beach State College  
Pasco-Hernando State College  
Pensacola State College  
Polk State College  
Seminole State College  
State College of Florida  
St. Petersburg College  
Tallahassee Community College



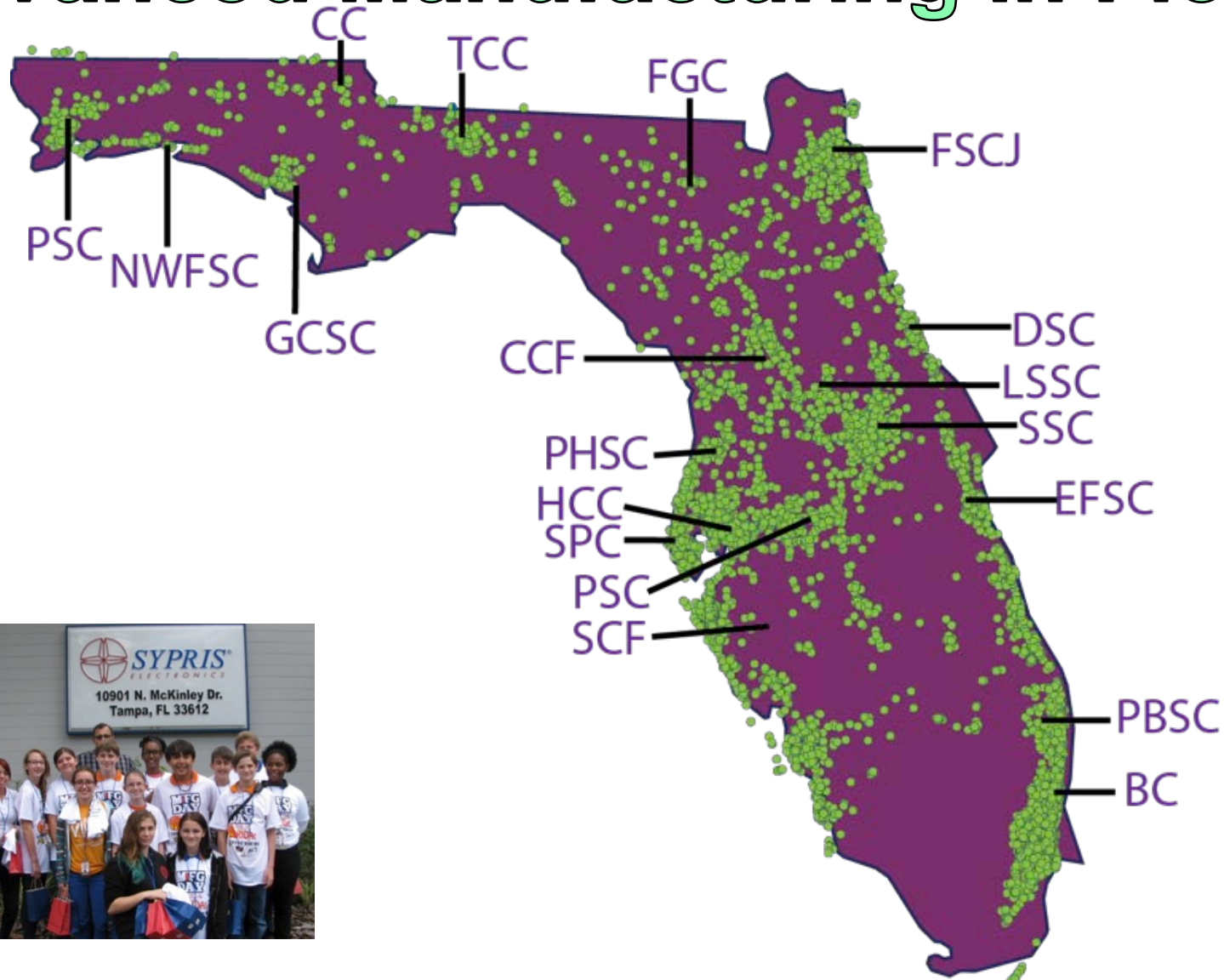
## 2016 Florida ET Degree College Network

# Florida Engineering Technology AS Degree





# Advanced Manufacturing in Florida



# Promoting Advanced Manufacturing Careers



# Career & Education Resources

[www.MadeinFlorida.org](http://www.MadeinFlorida.org)

Search Site  Go  

Made in FLORIDA

Industry | Careers | Students | Educators | Contact Us

Why Manufacturing | E.T. Degree | Student Profiles | Salary Information | Company Profiles | News & Events | Videos | Camps & Workshops

## Manufacturing in Florida

**...Good Jobs + Great Pay = GREAT LIFESTYLES!**

Earn Your E.T. Degree | Find a Great Career | Hire a <sup>ET Degree</sup> Graduate | Company Overviews | Educational Outreach



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“Manufacturing Day Tours:  
Student Feedback Shows Huge  
Impact”



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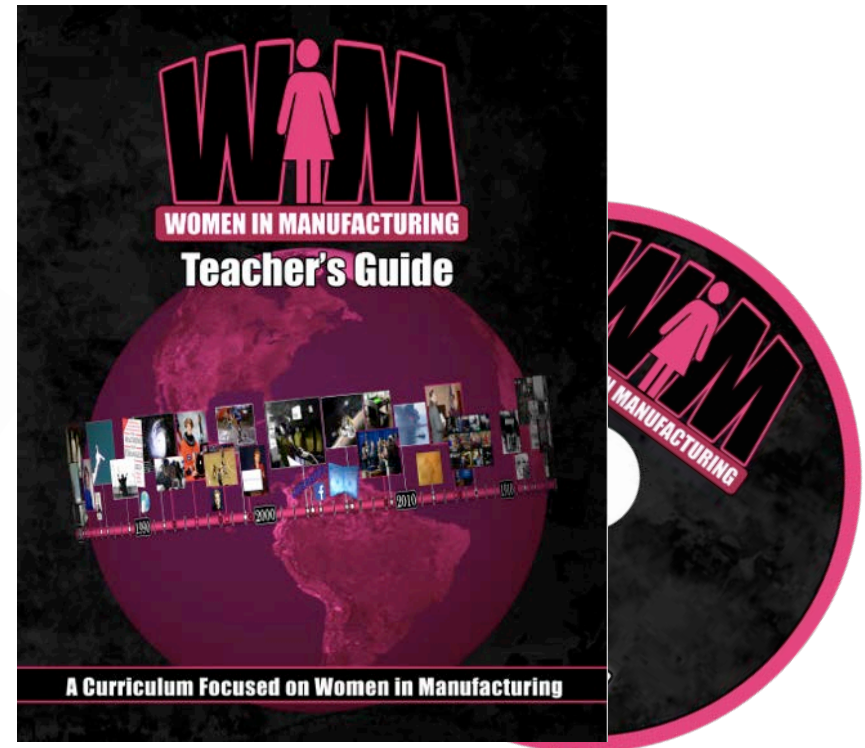
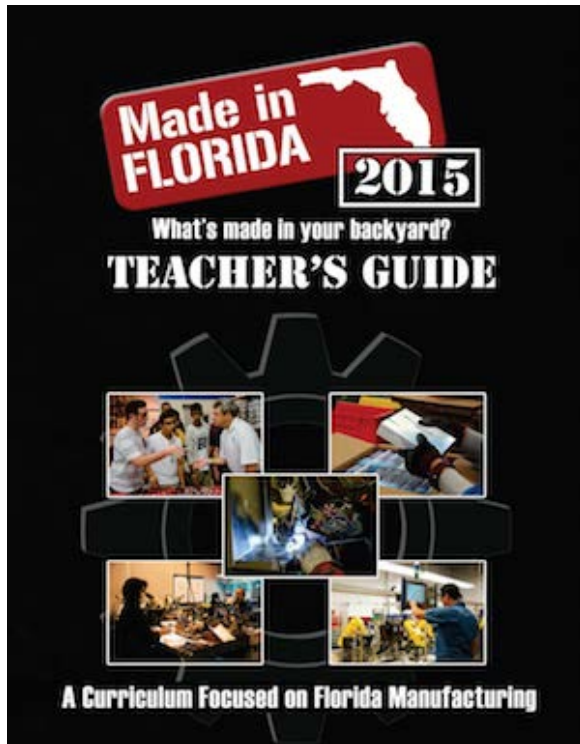
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# Career & Education Resources

## What's Made in *your* Backyard? Women in Manufacturing



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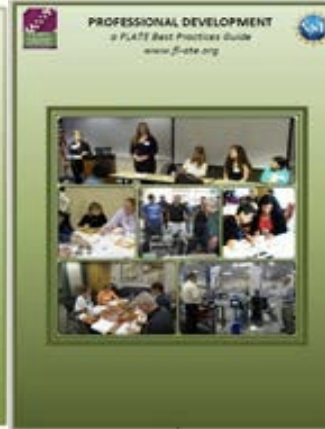
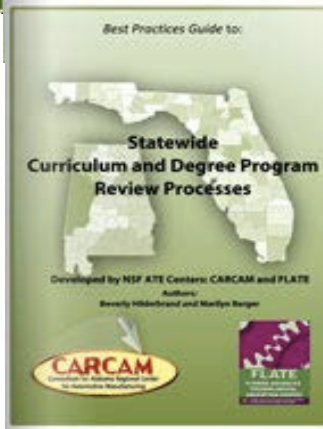
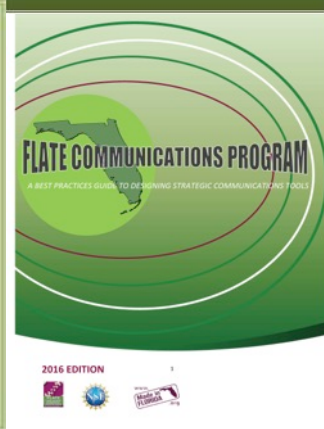
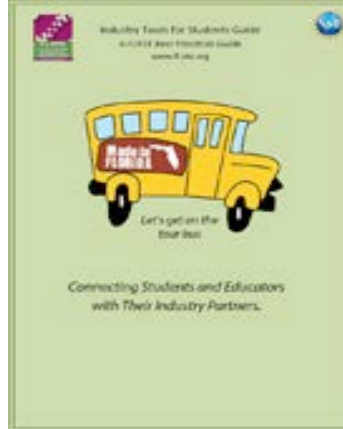
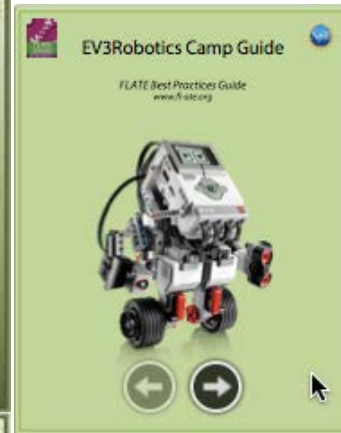
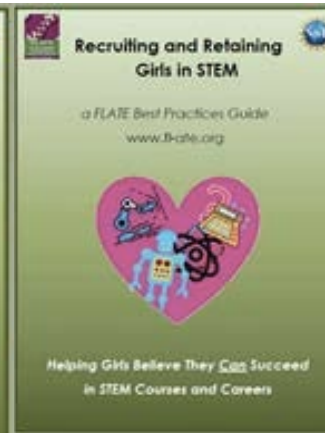
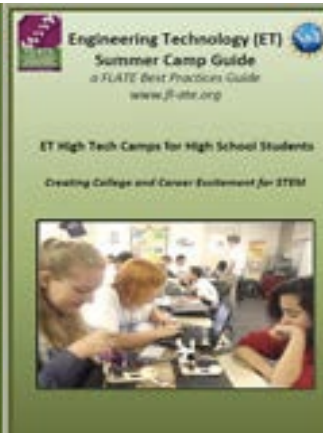
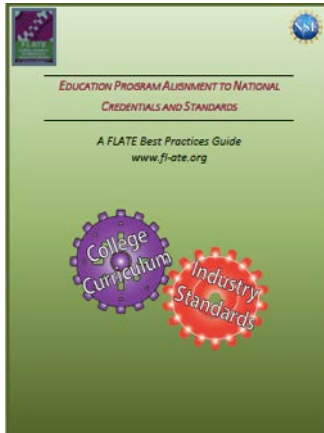
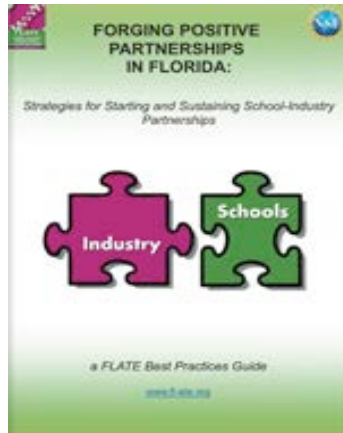
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**FLATE GUIDES**  
**BEST PRACTICE**



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# Career & Education Resources

**FLATE's** wiki  
 ...full of great FREE RESOURCES for you!

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<p>Made in Florida STEM Lesson Plans</p>  <p>For Elementary, Middle &amp; High School Educators</p>	<p>Career Education Resources</p> 	<p>Modules for Advanced Technological Education</p> 	<p>The Toothpick Factory</p>  <p>A Simulating Game for Soft Skills</p>	<p>Student Activity Sheets</p> 
<p>Industry Tour Resources</p>  <p>Find pre-tour lessons, post-toursurveys and many resources for all your Made in Florida tours!</p>	<p>Recruiting all GIRLS who love S.T.E.M.!</p>  <p>Resources for GIRLS in STEM!</p>	<p>FLATE Presentations, Publications, Meetings &amp; Webinars</p> 	<p>Professional Development Opportunities for Teachers</p>  <p>NEW! Summer Energy Camp for Teachers</p>	<p>Camp Resources</p>  <p>Robotics &amp; Energy Camp Resources for everyone.</p>
<p>Read FLATE's Monthly Newsletter!</p> 		<p>FLDOE Career Resources Florida's new education and career planning system!</p> 		



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Thank you



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