Webinar Logistics

- Please mute your phone line. If you are unable to manually mute your line press *6 and your line will be muted.

- If you have a question, you can raise or lower your hand by clicking the Raise Hand icon and selecting Raise Hand from the drop down menu at the top of your screen.

- Please change your information to your full name and state by clicking on the Attendee List drop down and selecting ‘Edit My Info’.

- All questions will be addressed following the presentation.

- We would like to remind everyone that this call is being recorded and will be available on The Manufacturing Institute website shortly following the webinar.
Engaging Faculty and College Leadership
Agenda

- Welcome and Purpose of Webinar
- National Update: 2011 Public Perception Survey
- Approaches to Fostering Engagement
  - College, Community, and State Leadership
  - Peer-to-Peer Leadership
- Q&A
- Changes to Webinar Schedule
The Public Supports Manufacturing

**Chart 5. Percentage of respondents who believe the manufacturing industry is very important to our**

- Economic prosperity: 86%
- Standard of living: 85%
- National security: 77%

**Chart 10. Ranking by respondents of the type of new industry facility they would support to create 1,000 new jobs in their community**

<table>
<thead>
<tr>
<th>Facility</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing facility</td>
<td>1</td>
</tr>
<tr>
<td>Energy production facility</td>
<td>2</td>
</tr>
<tr>
<td>Healthcare facility</td>
<td>3</td>
</tr>
<tr>
<td>Technology development center</td>
<td>4</td>
</tr>
<tr>
<td>Communications hub</td>
<td>5</td>
</tr>
<tr>
<td>Retail center</td>
<td>6</td>
</tr>
<tr>
<td>Financial institution</td>
<td>7</td>
</tr>
</tbody>
</table>

(Aggregate ranking of sectors by all respondents)

Download the full report:
http://institute.nam.org/view/2001125134531603398/info
Critical Components Driving Success

1. Identify State/Regional Economic Demands (Data Validation)
2. Develop Advanced Manufacturing Career Pathways
3. Develop a Timeline for Action
4. Engage Industry Leaders/Building Demand
5. **Engage Faculty and College Leadership**
6. Audit Programs of Study
7. Align and Map Certifications to Programs
8. Align to STEM; Emphasize/Integrate STEM Skills
9. Assess Faculty and Implement Professional Development
10. Develop Certification Partnerships
11. Deploy Dream It. Do It. (Student Recruitment)
12. Develop Feeder Systems (WIA, Adult Basic Education)
13. Develop Benchmarks
14. Drive a Policy Agenda
15. Sustain the Certification System (Administrative, Staffing & Fiscal Realities)
Institutional and Community Leadership

Dr. Roy Church
President
Lorain County Community College
NAM-Endorsed Skills Certification System

The Critical Role of Leadership: Institutional Community State
Lorain County Community College, an innovative leader in education, economic, community and cultural development, serves as a regional catalyst for change in a global environment through accessible and affordable academic and career-oriented education, lifelong learning and community partnerships.
Six Strategic Priorities

1. Raise the community’s participation and attainment in higher education
2. Prepare globally-competent talent to compete in the innovation economy
3. Accelerate business and job growth to enhance regional competitiveness
4. Connect Lorain County with regional priorities and partners
5. Serve as a catalyst for enhanced community life
6. Build the College’s resource capacity

Over 92% successfully completed!
## LCCC’s Educational Pipeline

<table>
<thead>
<tr>
<th><strong>K-12 Initiatives</strong></th>
<th><strong>Associate Degree and Certificate Programs</strong></th>
<th><strong>Bachelor’s and Master’s Degrees through University Partnership</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Secondary Enrollment Options</td>
<td>100 plus Associate Degree and Certificate Programs</td>
<td>Over 40 Bachelor and Master Degree Offerings</td>
</tr>
<tr>
<td>Early College High School</td>
<td>Fall 2009: Alternative Energy Technology, Wind Turbine Major Allied Health and Nursing Arts and Humanities Business (including ENTREPRENEURSHIP!) Engineering Technologies Health, Physical Education and Recreation Science and Math Social Sciences and Human Services</td>
<td>• Ashland University</td>
</tr>
<tr>
<td>Project Grad</td>
<td></td>
<td>• Bowling Green State University</td>
</tr>
<tr>
<td>Tech Prep</td>
<td></td>
<td>• Cleveland State University</td>
</tr>
</tbody>
</table>

18,298 students (120% increase since 2000) | 3,000 students

**Impacting 21,000 students plus another 11,000 through Continuing Education Offerings**
Achieving the Dream™ + Completion By Design Ohio Cadre = Student Success Agenda
Technology Creates Manufacturing Efficiencies

Workers travel further for employment

Entrepreneurs create jobs; new industries
A Decade of Economic Impact
Growing Talent; Growing Jobs

Innovation Fund
EII
Glide
Economy
FabLab
SMART Commercialization Center for Microsystems at Lorain County Community College
LCCC/NAM PROJECT GOALS

• Engage faculty and college leadership to align current programs with the NAM- Endorsed Manufacturing Skills Certification System (institutional)
• Engage community and employers to promote value and use of skills certifications (community)
• Support state leaders in taking critical next steps to facilitate statewide adoption of the skills certification system (state)
Unique Infrastructure and Partnerships Facilitated Engagement and Collaboration

- University Partnership: bachelors’ & masters’ degrees offered onsite
- First Advanced Technologies Center in Ohio
- Member of National Coalition of Advanced Technology Centers
- NSF National Center for Welding Education & Training (Weld-Ed)
INSTITUTIONAL ENGAGEMENT

• Orientation sessions with The Manufacturing Institute for faculty, department chairs and other college leadership

• Ownership of the initiative by the Provost and Dean of Engineering

• Regular faculty planning meetings and updates on progress

• Celebrations of success involving and showcasing faculty!
COMMUNITY ENGAGEMENT

• Introduce certifications & benefits to community groups, employers, individuals, region

• Solicit community and employer partnership in NAM Endorsed Skills System Certifications

• Solicit employer input on certification pathways

• Solicit participants to pilot certifications with incumbent workers and/or new hires
STATEWIDE ENGAGEMENT

• Ohio Association of Community Colleges assumed leadership role in asset mapping
• Developed report with assets to support certifications in K-12, Adult Career Centers, community colleges & universities, CBO’s
• Increased awareness of potential resources to support certifications & also potential policy issues
STATEWIDE ENGAGEMENT

Governor’s Workforce Policy Advisory Board and MAGNET

- Policy Advisory Board formed Credential Committee to develop plan for statewide certification program
- Ohio Board of Regents assumed leadership role
- MAGNET, employer led organization and LCCC partner, hired as project manager
- Worked with employers statewide to identify entry level certifications
- Piloted 4 projects that validated use of NCRC & MSSC
OBSERVATIONS

• Leadership must promote a culture of collaboration – no institution can achieve its vision and goals in a vacuum
• Goals of education, economic development, culture and community are all interrelated
• NAM- Endorsed Manufacturing Skills Certification System is not a “stand-alone” initiative – it needs to be woven into the fabric of the college
Contact

• Kelly A. Zelesnik
  Dean, Engineering Technologies Division
  Lorain County Community College
  kzelesni@lorainccc.edu
  http://www.lorainccc.edu/
Peer-to-Peer Leadership

Dr. Marilyn Barger
Executive Director
Florida Advanced Technological Education Center
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.
Florida’s Engineering Technology Degrees
supporting Florida’s manufacturing workforce needs
FLATE GOALS

Outreach  Curriculum Reform  Professional Development

Made in Florida

Tell  Teach  Train
Advancing Excellence in Engineering Technologies

ATE CENTERS
www.atecenters.org
INDUSTRY

skilled workers

NEEDS

outdated programs

low enrollments

confusing for students and industry

equipment limitations

duplication

competitive

COLLEGE PROGRAMS

tech grads
Florida’s Unified Education System for Manufacturing

COLLABORATIVE PARTNERS

- State DOE
- Workforce Agencies
- External Benchmarks
- State Colleges Academic & Workforce Programs
- Manufacturers
- School Districts
COLLABORATIVE PARTNERS

Demonstrate proficiency in integrating production equipment and area controllers.

- Design analog and digital control systems along with applicable software to specific manufacturing requirements.
- Chart and analyze ladder logic diagrams for manufacturing processes.
- Develop and analyze flow charts from ladder diagram related process controls.
- Operate Programmable Logic Controllers with device drivers.
- Apply software to workcells and area controllers.
- Integrate control systems and equipment with production support mechanisms.

Demonstrate proficiency in bar coding, automatic tracking systems for materials handling.

- Describe automatic inventory accounting and control system.
- List the underlying principles and methods of control in progress.
- Analyze product flow cycle.
- Describe warehouse throughput systems.
- Implement automated tracking in the laboratory environment.
- Describe machine vision applications.
- Maintain machine vision and sensing system equipment.

MSSC

- Production
- Health, Safety, Environment
- Logistics & Inventory Control
- Maintenance, Installation & Repair
- Production process design
- Quality
COLLABORATIVE PARTNERS


Meeting locations since 1996
ET FORUM ORGANIZATION

The Florida Engineering Technology Forum (ET Forum) is an important vehicle that brings together the diverse and geographically dispersed colleges to address challenges and tackle common issues. Meeting since 1996.

- Free to all participants (generally 25-40)
- Hosted by various colleges
- 2-days; meeting twice / year
- 1 permanent chair + 1 local host
- No budget, no officers, no by-laws
- Open agenda and lots of dialogue
ET FORUM PARTICIPANTS

- College faculty and program managers
- FL DOE program supervisors
- Local and regional industry representatives
- University partners
- CTE – academic standards alignment
- State agency professionals
- Local K12 and CTE administrators
<table>
<thead>
<tr>
<th>Task</th>
<th>FLATE</th>
<th>FORUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct/analyze survey of frameworks</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Define program overlaps</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Consolidate degrees/define common core</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Define specializations</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Write frameworks &amp; statewide justification, revise</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Submit to FLDOE for approval</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Map/align MSSC – ET Core</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Write statewide articulation; approve</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Submit to FLDOE for approval</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Help Colleges adopt &amp; implement degree/certs</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Support college programs (equipment grants, recruiting/marketing, curriculum wiki, liaison with DOE, etc)</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Implement alignment validation (student testing, common student out comes, mapping)</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
ET ASSOCIATE OF SCIENCE 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
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
- Manufacturing Processes & Materials
- Mechanics & Instrumentation
- Electronics
- Quality
- Safety

III. 8 Specialization Tracts – 24 to 27 credit hours
- Advanced Manufacturing
- Biomedical Systems
- Electronics
- Quality
- Advanced Technology
- Digital Design & Modeling
- Mechanical Design & Fabrication
- Alternative Energy System
ET ASSOCIATE OF SCIENCE MODEL

Articulate Via Certification

- Apprenticeship
- Workforce Certification
- Technical School

 HS Academy
 HS Tech Program

Certificate Pathway
2-Year Pathway
2-Year Pathway starting with MSSC

CREDENTIAL

Year 1
GENERAL EDUCATION

SUPPORTING TECHNICAL and ACADEMIC SKILLS/KNOWLEDGE

GED
HS Graduate

Year 2
TECHNICAL SKILLS/KNOWLEDGE

A.S. /A.A.S. DEGREE
ARTICULATE TO B.A.S.
B.S. ET Degree or other 4 year degree

COLLEGE CREDIT CERTIFICATE and/or NATIONAL CREDENTIAL

LIFELONG LEARNING

return
ET ASSOCIATE OF SCIENCE DETAILS

**Year 1**

I. GENERAL EDUCATION COURSES (15 credit hours)
- Computer Aided Drafting
- Introduction to Electronics
- Manufacturing Materials & Processes
- Mechanical Measurements & Instrumentation
- Quality
- Safety

II. ENGINEERING TECHNOLOGY CORE (18 credit hours)
- Quality
- Electronics
- Advanced Technology
- Advanced Manufacturing
- Alternative Energy Systems
- Biomedical Systems
- Digital Design & Modeling
- Mechanical Design & Fabrication

**Year 2**

III. ENGINEERING TECHNOLOGY SPECIALIZATION TRACTS (27 credit hours in 1 of 7 tracts)
- Quality
- Electronics
- Advanced Technology
- Advanced Manufacturing
- Alternative Energy Systems
- Biomedical Systems
- Digital Design & Modeling
- Mechanical Design & Fabrication

**Certificate Pathway**
- HS Academy
- HS Tech Program

**2-Year Pathway starting with MSSC**

**MSSC**

**GED HS Graduate**

**A.S. or A.A.S. DEGREE in ENGINEERING TECHNOLOGY (with one of eight specializations)**

**B.A.S. - Bachelor's of Applied Science OR B.S.A.S. - Bachelor's of Science in Applied Science, OR B.S. E.T. - Bachelor's of Science in Engineering Technology**

**LIFELONG LEARNING**
ET DEGREE SCENARIOS

**HS Grad / GED with no Technical Program - wants AS/AAS Degree**
- HS
- AS/AAS Degree (and optional certificates)

**HS Grad / GED with MSSC Certification (from HS or experience)**
- MSSC
- AS/AAS Degree & MSSC CPT (and optional certificates)

**HS Grad / GED without Technical Program**
- HS
- College Certificate & MSSC CPT

**AS ET Graduate**
- AS
- BS Applied Science or BS Eng Tech
ET DEGREE ALIGNMENT VALIDATION

Florida Curriculum Framework Standards

Student outcomes: course syllabus - text books

External Standard

MSSC
Tools for Workforce Excellence
ET DEGREE MEDIA CAMPAIGN

Engineering Tech @ St. Petersburg College
(60 credits)

The Engineering Technology Associate in Science degree is a 60 credit hour program. The degree program consists of general education (18cr), ET core (15cr) and specialized technology (32cr) courses. This degree program consists of four specializations: Digital Design and Modeling, Biomedical Systems, Electronics and Quality.

After completing the ET Core Courses, students will be prepared to take the Manufacturing and Audit Council (MASC) assessments for the Certified Production Technician (CPT).

ENGINEERING TECHNOLOGY
Core Courses

<table>
<thead>
<tr>
<th>C/D</th>
<th>Electronics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement &amp; Instrumentation</td>
<td>Quality</td>
</tr>
<tr>
<td>Manufacturing Processes</td>
<td>Safety</td>
</tr>
</tbody>
</table>

SPECIALIZATIONS
Available

DIGITAL DESIGN AND MODELING

BIOMEDICAL SYSTEMS

ELECTRONICS

QUALITY

College Credit Certificates

COMPUTER-AIDED DESIGN AND DRAFTING (12 credits)

ENGINEERING TECHNOLOGY SUPPORT (18 credits)

LEAN SIX SIGMA GREEN BELT (12 credits)

MEDICAL QUALITY SYSTEMS (12 credits)

SKY SIGMA BLACK BELT (12 credits)

For a list of courses required for these certificates, visit www.spc.edu or contact the Engineering Technology Department at 727.341.4918.

The ET Degree or any of its certificates can be used first step towards a challenging career in modern manufacturing or other high technology industries. With a 2 year degree, you can earn over $35,000 per year start.

High-Wage High-Skill Careers
MADE IN FLORIDA

Engineering Technology Education

HILLSBOROUGH COMMUNITY COLLEGE

FLORIDA ADVANCED TECHNOLOGICAL EDUCATION CENTER

IN PARTNERSHIP WITH FLATE

EXPLORE CAREERS IN MANUFACTURING

OUTLOOK FOR TECHNOLOGY JOBS IN FLORIDA

Manufacturing is BIG BUSINESS and it's getting bigger! Florida's workforce is in demand to keep its engineers, technicians and skilled workers on the fast track.

FLATE (Florida Center for Manufacturing Education and Training) offers a variety of programs to help young people enter this high-tech job market. For more information, visit www.flate.org or call 813.253.1122.

MADE IN FLORIDA

www.madeinflorida.org www.fl-ate.org

ENHANCE YOUR SKILLS & INCREASE YOUR WORTH

ENROLL TODAY

ENGINEERING TECHNOLOGY EDUCATION

Hillsborough Community College

FLORIDA ADVANCED TECHNOLOGICAL EDUCATION CENTER

IN PARTNERSHIP WITH FLATE
### ET Degree Media Campaign

**General Education and Engineering Technology Core Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETC 101</td>
<td>Freshman Composition Skills I</td>
<td>3</td>
</tr>
<tr>
<td>ETC 111</td>
<td>Humanities Requirement</td>
<td>3</td>
</tr>
<tr>
<td>ETC 114</td>
<td>Technical Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>ETC 114G</td>
<td>Social Sciences Requirement</td>
<td>3</td>
</tr>
<tr>
<td>ETC 114I</td>
<td>Biological or Physical Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**Engineering Technology Core (18 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETC 2202</td>
<td>Computer Aided Drafting and Design</td>
<td>3</td>
</tr>
<tr>
<td>ETC 3041</td>
<td>Survey of Electronics</td>
<td>3</td>
</tr>
<tr>
<td>ETC 3111</td>
<td>Basic Manufacturing</td>
<td>2</td>
</tr>
<tr>
<td>ETC 3112</td>
<td>Quality Management of Manufacturing Systems</td>
<td>2</td>
</tr>
<tr>
<td>ETC 3113</td>
<td>Manufacturing Processes &amp; Fluid Dynamics</td>
<td>2</td>
</tr>
<tr>
<td>ETC 3114</td>
<td>Manufacturing Processes &amp; Materials Handling</td>
<td>2</td>
</tr>
<tr>
<td>ETC 3115</td>
<td>Manufacturing Processes &amp; Inspection</td>
<td>2</td>
</tr>
<tr>
<td>ETC 3116</td>
<td>Manufacturing Processes &amp; Environment</td>
<td>2</td>
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</tbody>
</table>

### Education and Engineering Technology Core Courses

**General Education (16 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tr>
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<td>ETC 3116</td>
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</tr>
</tbody>
</table>

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**ET Degree Hire a Graduate!**

Community colleges currently offering the ET degree include:

[View program information](#)

---

**Resources**

- FLATE Scholarship Information
- More Terrific Resources

---

**Popular Pages**

- Awards
- College and Community College
- Company Profile
- Educational Outreach
- Educational Pathways
- Engineering Technology
- ETC Degree
- ETC Degree Overview
- ETC Degree Options
- ETC Degree Programs
- ETC Degree Resources
- ETC Degree Scholarships
- ETC Degree Study Options
- ETC Degree Technology

---

**Engineering Technology in Florida**

The Engineering Technology (ET) degree program was developed by the Florida Advanced Technological Education (FLATE) Center with Community Colleges and industries across the state in close partnership with the Florida Department of Education and to address a growing need to supply manufacturers and high technology industries with qualified, highly skilled workers in the foreseeable future.
<table>
<thead>
<tr>
<th><strong>do the “hard” stuff</strong></th>
<th><strong>seize opportunities</strong></th>
<th><strong>share the “win”</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>define a neutral working space</strong></td>
<td><strong>accept compromise</strong></td>
<td><strong>listen actively</strong></td>
</tr>
<tr>
<td><strong>“work with what you’ve got”</strong></td>
<td><strong>nurture relationships</strong></td>
<td><strong>recognize others</strong></td>
</tr>
<tr>
<td></td>
<td><strong>build consensus</strong></td>
<td><strong>make a team</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>laugh together</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>engender trust</strong></td>
</tr>
</tbody>
</table>

**Florida’s Engineering Technology Degrees**

supporting Florida’s manufacturing workforce needs
Marilyn Barger, Ph.D., P.E.
Executive Director & P.I. FLATE
Florida Advanced Technological Education Center

www.fl-ate.org
www.madeinflorida.org
813.259.6578
barger@fl-ate.org
Discussion Forum and Questions
2011 Schedule of Webinars

Webinars will be from 12:00-1:30 p.m. Eastern Time

- October 20  ***Time Change***
  - Topic: Skills Gap Report
  - Time: 12:30 – 2:00 p.m. (Eastern Time)
- November 16