UT | CIS Center for Industrial Services
INSTITUTE *for* PUBLIC SERVICE

Tennessee Manufacturing Extension Partnership

PROFESSIONAL DEVELOPMENT

SAFER, FASTER, MORE EFFICIENT MANUFACTURING WITH SMART MANUFACTURING

Manufacturing is quickly evolving and now requires new knowledge and skills. Technologies such as digital security, robotics, IIOT solutions, and 5G networks and infrastructure are changing the industry and the way manufacturers work, creating demand for workers who are skilled in these advanced technologies. Forward-thinking manufacturers are investing in training programs to build the Industry 4.0 capabilities needed to remain competitive

FLEXIBLE AND CONVENIENT

Online classes are self-paced, typically taking 60 minutes to complete. They are easily and conveniently accessible on desktops and laptops, and on tablets and phones with the Tooling U-SME app.

Online Training offers:

- Content developed by industry experts
- Accessible anytime, anywhere
- Self-paced
- Predefined curriculum for each job role
- Engaging and interactive content
- Pre- and post-training knowledge assessments
- Access to Tooling U-SME's Learning Management System (LMS)
- Guidance from our Client Success team, including advice, insights, and ideas built on best practices and years of experience

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Website: **tmep.cis.tennessee.edu**
Contact: **tmep@tennessee.edu**

Choose a starting point based on employee's experience or company goals for a quick-start training solution.

SMART MANUFACTURING

EFFECTIVE COMBINATION OF CLASSES

This Industry 4.0 training program offers a comprehensive overview of the competencies needed to take advantage of the smart manufacturing technologies that are driving the industry forward. This series includes the following classes:

- Introduction to Digital Twin*
- Introduction to Digital Thread*
- Introduction to Machine Learning and Artificial Intelligence*
- Machine Learning and Artificial Intelligence Applications*
- Automated Systems and Control*
- Introduction to Robotics
- Robot Safety
- Robot Applications*
- Robot Components
- End Effectors
- Robot Installations
- Robot Power and Drive Systems
- Introduction to Collaborative Robots*
- Robot Axes and Pathways
- Robot Sensors
- Robot Control Systems
- Vision Systems*
- Robot Troubleshooting
- Concepts of Robot Programming
- Robot Maintenance
- Cybersecurity for Manufacturing Basics*
- Cybersecurity for Manufacturing: Malware Overview*

- Introduction to the Industrial Internet of Things*
- Data Collection Fundamentals*
- Automatic Identification Technology*
- Cybersecurity for Manufacturing: Hacking Overview*
- Cybersecurity for Manufacturing: Wireless Networks*
- Introduction to Digital Networks*
- Data Collection: Inventory and Maintenance*
- Introduction to Smart Manufacturing*
- Introduction to Smart Business Strategy*
- Smart Business Strategy: Adopting Smart*
- Smart Business Strategy: Data Management*
- IIoT Infrastructure for Smart Manufacturing*
- Organizing Big Data for Smart Manufacturing*
- Introduction to PLCs*
- Integrating System Layers for Smart Manufacturing*
- Cybersecurity: Tools and Methods*

- Introduction to the Smart Supply Chain*
- Augmented Worker*
- Introduction to Collaborative Robots*
- Leveraging Machine Learning for Process Modeling and Optimization*
- Continuous Process Improvement: Managing Flow*
- Continuous Process Improvement: Identifying & Eliminating Waste*
- Troubleshooting*
- SPC Overview*
- Lean Smart Manufacturing Overview*
- Smart Manufacturing - Managing a Smart Manufacturing Facility
- Introduction to Integrated Systems for Smart Manufacturing
- Process Controls Fundamentals
- Introduction to Proportional-Integral-Derivative (PID) Tuning
- Robot Applications: Palletizing
- Robot Applications: Machine Tending
- Network Integration for Robot Workcells

CESMII

*Denotes classes that are a part of the Fundamentals of Smart Manufacturing Learning Curriculum that Tooling U-SME and CESMII (The Smart Manufacturing Institute) have partnered to create.

— New content is always being added. Check with your representative for the most current list of classes. —