



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF FOOD, AGRICULTURAL,  
AND ENVIRONMENTAL SCIENCES

## 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

## EFFECTIVE COMBINATION OF CLASSES

This Smart Manufacturing 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:

#### ADDITIVE MANUFACTURING

Introduction to Additive Manufacturing  
Additive Manufacturing Safety  
The Basic Additive Manufacturing Process  
Additive Manufacturing Methods and Materials  
Introduction to Hybrid Manufacturing  
Rapid Prototyping  
Additive Manufacturing: Prototype to Production  
Design for Additive Manufacturing  
Additive Manufacturing Materials Science  
Integrating Additive Manufacturing with Traditional Manufacturing  
Additive Manufacturing as a Secondary Process

Nondestructive Testing for Additive Manufacturing  
The Additive Manufacturing Supply Chain  
Managing the Additive Manufacturing Supply Chain  
Hybrid Manufacturing with Directed Energy Deposition  
Design for Fused Deposition Modeling  
Design for Directed Energy Deposition  
Design for Binder Jetting

#### INDUSTRIAL INTERNET OF THINGS

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 Digital Twin  
Introduction to Digital Thread  
Introduction to Machine Learning and Artificial Intelligence  
Machine Learning and Artificial Intelligence Applications

#### ROBOTICS

Robot Components

Applications for Robots  
Automated Systems and Control  
Robot Axes  
Robot Maintenance  
Introduction to Robotics  
Robot Safety  
Robotic Drives, Hardware, and Components  
End Effectors  
Robot Installations  
Robotic Control Systems  
Industrial Network Integration  
Introduction to Collaborative Robots  
Robot Sensors  
Vision Systems  
Robot Troubleshooting  
Concepts of Robot Programming

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