



ASTM INTERNATIONAL  
Additive Manufacturing Center of Excellence

# Additive Manufacturing General Personnel Certificate Program (Online)

Learn the core fundamental concepts of Additive Manufacturing from industry leaders

Aug 2020 (Aug 4 – Aug 27, two modules per week)

**Background —** Following the success of the first edition of AM General Personnel Certificate course at Auburn University in March 2020, AM CoE is offering the second edition of the course through online mode. With more and more industrial sectors adopting additive manufacturing (AM) technology, there is a large demand for a skilled workforce to support the rapid growth of the field. As a leading driver of AM technology, ASTM is committed to filling the AM knowledge gap by providing world-class training from industry leaders to equip the future AM workforce with highly valued technical skills.

The ASTM Additive Manufacturing Center of Excellence (AM CoE) has made Education and Workforce Development one of its key focus areas for promoting the acceleration of AM adoption. The AM CoE's training is tailored to industry needs and incorporates the latest technological advances and standards to prepare students to take on the current challenges in the field.

**About the course —** The second edition of the AM General Personnel Certificate Course is offered online to support the AM community to continue learning in these difficult times. The course comprises of 8 modules that covers all the general concepts of the AM process chain. To give flexibility to the attendees in taking the online classes, the course is scheduled such that two modules will be covered every week to complete the entire course in one month.

This course will equip attendees with core technical knowledge related to common AM practices and will allow them to earn a General AM Certificate that will serve as the foundation and pre-requisite for earning future specialized role-based AM certificates through the ASTM AM CoE. Attendees will complete a multiple-choice exam upon course completion.

**Who should attend? —** You are welcome to join if you are just stepping into AM or if you have experience and are looking to advance your knowledge and stay

relevant. The course is open to individuals from government agencies, industry, and academia with any level of AM experience, including those with no prior experience.

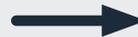
### Why sign up for this course?

- Gain core foundational technical knowledge covering the entire AM process chain
- Stand out in the industry with ASTM E2659-18-compliant certificate from the globally recognized ASTM AM CoE
- Chart your own path: This course is the first step toward multiple AM CoE role-based certificates
- Each module taught by experts from academia, industry, national labs, and regulatory bodies



**EARN A DIGITAL BADGE** after successful completion of this course. These badges are an innovative way to showcase career knowledge, skills, and abilities obtained through professional development. Add the badges to your digital portfolios or share on social and professional networks.

This course aims to provide a foundation for AM body of knowledge:





### Terminology and AM Process Overview

David Bourell, *UT-Austin*  
Francisco Medina, *UT-El Paso*

Provides an overview of AM with descriptions of different AM process categories, process steps, materials, applications and associated terminologies



### Design and Simulation

Eujin Pei, *Brunel University*  
David W. Rosen, *Georgia Tech*

Outlines key considerations for AM design, including creating and working with design files, defining requirements, criticality, and material suitability, and conducting analysis and simulation



### Feedstock

Tony Thornton, *Micromeritics*  
Khalid Rafi, *ASTM International*

Covers feedstock behavior and its effects on part performance, powder characterization techniques, powder handling and storage, and powder re-use strategies



### Metrology and Post-Processing

Richard Leach, *University of Nottingham*  
Alex Kitt, *EWI*

Provides a fundamental understanding on the applications of metrology on AM, and various post-processing methods, procedures, thermal processes, as applicable to different material systems



### Mechanical Testing

Nima Shamsaei, *Auburn Univ.*  
Chris Holshouser, *WSU-NIAR*

Focuses on fatigue testing and characterization and addresses testing requirements applicable to AM parts. Static and dynamic test methods, testing considerations, and interpretation of the results are the key focus areas



### Non-Destructive Inspection

Don Roth,  
*Roth Technical Consulting*

Details non-destructive testing and inspection methods that can be applied to AM. Specific techniques are explained along with their benefits, limitations, and other requirements to perform the inspection



### Safety Issues

Francois Richard, *P&W Canada*

Provides an outline of safety considerations, including insights on risk assessment strategies such as identifying hazards, mitigation measures, facility design considerations, engineering and administrative considerations, and regulatory codes applicable to AM



### Qualification and Certification, Parts 1 and 2

Part 1  
Matthew Di Prima, *FDA*  
Daniel Porter, *FDA*  
Anne Talley, *FDA*  
David Hwang, *FDA*

Part 2  
Douglas Wells, *NASA*  
Michael Gorelik, *FAA*

Provides a general understanding on the activities necessary to qualify a process and certify a part against a set of application-based regulations.

## Course Schedule

### WEEK 1

Day 1: August 4 – 9 a.m. to 1 p.m. EST (4 hours)  
Day 2: August 6 – 9 a.m. to 1 p.m. EST (4 hours)

Module 1: Additive Manufacturing Process Overview and Standard Terminology  
Module 2: Design and Simulation

### WEEK 2

Day 3: August 11 – 9 a.m. to 11 p.m. EST (4 hours)  
Day 4: August 13 – 8 a.m. to 1 p.m. EST (5 hours)

Module 3: Additive Manufacturing Feedstock  
Module 4: Metrology and Post-Processing

### WEEK 3

Day 5: August 18 – 9 a.m. to 1 p.m. EST (4 hours)  
Day 6: August 20 – 9 a.m. to 11 a.m. EST (2 hours)

Module 5: Mechanical Testing  
Module 6: Additive Manufacturing Safety

### WEEK 4

Day 7: August 25 – 9 a.m. to 12 p.m. EST (3 hours)  
Day 8: August 26 – 9 a.m. to 12 p.m. EST (3 hours)  
Day 9: August 27 – 9 a.m. to 1 p.m. EST (4 hours)

Module 7: Non-destructive Inspection  
Module 8: Qualification and Certification, Part 1  
Module 8: Qualification and Certification, Part 2

### Register at [www.amcoe.org](http://www.amcoe.org)

**\$1,100** (ASTM members **\$999**)  
if registered prior to July 15, 2020

**\$1,300** (ASTM members **\$1,199**)  
if registered after July 15, 2020

### For more information, contact:

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