

# Additive Manufacturing and Design Graduate Programs



**PennState**  
World Campus

A world of possibilities.  
Online.

# Master of Engineering in Additive Manufacturing and Design

Penn State's 30-credit online Master of Engineering in Additive Manufacturing and Design (AMD) program can prepare you to apply foundational knowledge, critical thinking, problem-solving, and creativity in your use of additive manufacturing and design tools and methods.

As a student in this program, you will complete five core courses that cover:

- › additive manufacturing processes
- › materials for additive manufacturing
- › scientific and engineering foundations of additive manufacturing
- › design for additive manufacturing
- › hands-on laboratory experience in additive manufacturing

In addition to the core courses, you will take at least 8 credits of elective courses covering topics that include design, materials, manufacturing, technical writing, technical presentations, and supply chain economics.

An on-campus residency is required for the metal additive manufacturing laboratory course. The residency will help you acquire hands-on experience in Penn State's state-of-the-art 3D printing laboratory and advanced material characterization facilities.

"Penn State World Campus gave me the opportunity to tap into its invaluable network of talent and resources as I continued my career. Penn State's culture of innovation and competition has helped push me to achieve my full potential ... and provided me with the ability to see further down the line in terms of industry growth, technology obsolescence, and new emerging competitive advantages—instrumental to my success day to day."

— **Joseph S., Graduate  
Master of Engineering in  
Additive Manufacturing and Design**

# Graduate Certificate in Additive Manufacturing and Design

Penn State's 12-credit online Graduate Certificate in Additive Manufacturing and Design can provide you with fundamental knowledge in materials science and engineering. Many industries, such as aerospace, health care, energy, and consumer goods, utilize 3D printing technology. The certificate provides a marketable credential as you enter into this field.

To earn this graduate certificate, you will complete three of the following four courses:

## **Design for Additive Manufacturing**

Studies research in the field of design for additive manufacturing that aims to establish an understanding of both opportunistic possibilities and restrictive limitations when designing products for creation with additive manufacturing.

## **Scientific and Engineering Foundations of Additive Manufacturing**

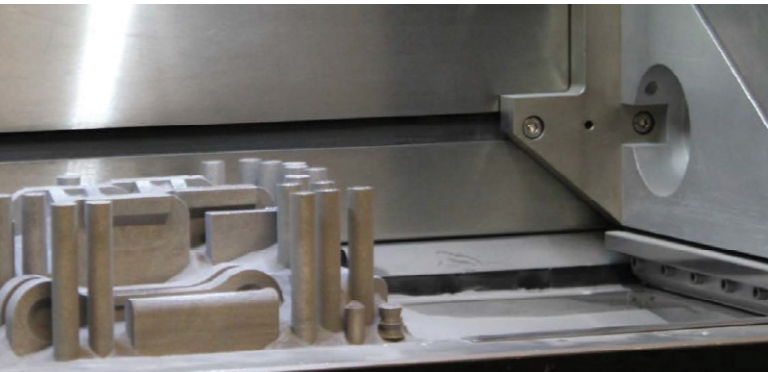
Explores processes with a focus on the fundamentals of sintering and fusion of metals, ceramics, and polymers.

## **Additive Manufacturing Processes**

Covers the fundamentals of additive manufacturing process.

## **Additive Manufacturing of Metallic Materials**

Focuses on the state of the art in understanding processing, structure, and property relationships in materials fabricated using additive manufacturing.



# Begin Your Application Today

To apply for admittance to the master's or certificate program, you will need to complete an online Graduate School Application by clicking on the "Apply Now" link on the program overview page:

Master's: [worldcampus.psu.edu/amdonline](http://worldcampus.psu.edu/amdonline)

Certificate: [worldcampus.psu.edu/amdcertonline](http://worldcampus.psu.edu/amdcertonline)

## Online Program Benefits

- › Learn through convenient courses online, taught by the same experienced faculty who teach on campus.
- › Enhance your résumé with a respected degree from a university consistently ranked by *U.S. News & World Report* as having one of the nation's best engineering schools.
- › Stand out in a competitive job market; acquire a skill set valued across a wide range of industries.



"A revolution is underway in manufacturing, and additive manufacturing is leading the way. The design and material freedoms enabled by 3D printing are creating new opportunities in nearly every industry and spurring entirely new businesses. ... We have leveraged our faculty and staff expertise and state-of-the-art facilities to create the world's first online graduate degree

program, addressing the industry's needs to grow future leaders in this field."

—Timothy W. Simpson  
Director, AMD Graduate Program  
Paul Morrow Professor of Engineering  
Design and Manufacturing



# Online Learning

Penn State World Campus offers these programs online to give you the flexibility to complete your course work when and where it is most convenient for you. As a student, you can tailor your schedule according to your own pace and needs, but your courses will have the same academic requirements you would expect from a resident Penn State program.

Your learning experience will be supported by frequent interaction with faculty and other students, access to information and instructional resources, valuable academic advising, and dedicated support services.

Once you successfully complete the program requirements, you will receive a certificate or degree that is identical to the one received by any Penn State student, with no mention of online or distance education.

# Contact Us

## Program Questions

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Graduate Program*

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## Admissions Questions

pennstateonline@psu.edu  
814 863 5386  
worldcampus.psu.edu/admissions



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