

# ADDITIVE MANUFACTURING AND DESIGN GRADUATE CREDIT CERTIFICATE PROGRAM

<b>Person-in-Charge</b>	Allison Beese
<b>Program Code</b>	AMD
<b>Campus(es)</b>	World Campus

The overall goal of the graduate AMD Certificate is to educate post-baccalaureate students and working engineers in the fundamental principles and applications of additive manufacturing. The AMD Certificate provides an entry for industry practitioners and existing workforce to gain knowledge and skills for additive manufacturing. Many workers may already have a graduate-level degree yet seek opportunities for professional development and education, particularly in additive manufacturing and design. The 12-credit curriculum will expose students to the knowledge and skills necessary to work effectively across AMD domains.

**Effective Semester:** Spring 2023  
**Expiration Semester:** Spring 2028

## Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<https://gradschool.psu.edu/graduate-admissions/how-to-apply/>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<https://gradschool.psu.edu/graduate-education-policies/>). International applicants may be required to satisfy an English proficiency requirement; see GCAC-305 Admission Requirements for International Students (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-305-admission-requirements-international-students/>) for more information.

The admission requirements for the students enrolling in the online AMD Certificate will be based on a combination of academic records, resume and applicable work experience, personal statement of interests, and three letters of recommendation from a previous professor or supervisor who can attest to the applicant's academic potential. Applicants will be expected to have a Bachelor of Science or four-year Associate's degree from an accredited institution in engineering, engineering technology, manufacturing, materials science, or related field. An undergraduate cumulative grade point average of 3.0 or better on a 4.0 scale in the final two years of undergraduate studies is required. Official GRE scores are not required but will be considered if submitted.

## Certificate Requirements

Requirements listed here are in addition to requirements listed in Graduate Council policy GCAC-212 Postbaccalaureate Credit Certificate Programs (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/>).

Requirements listed here are in addition to requirements listed in Graduate Council policy GCAC-212 Postbaccalaureate Credit Certificate Programs (<https://gradschool.psu.edu/graduate-education-policies/>).

[gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/](https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/)).

Code	Title	Credits
<b>Required Courses</b>		
Complete three of the following four non-laboratory courses, for a total of 12 credits:		12
EDSGN 562	Design for Additive Manufacturing	
ESC 545	Engineering and Scientific Principles of Additive Manufacturing	
IE 527	Additive Manufacturing Processes	
MATSE 567	Additive Manufacturing of Metallic Materials	
<b>Total Credits</b>		<b>12</b>

## Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

## Learning Outcomes

The overall goal of the graduate AMD Certificate is to educate post-baccalaureate students and working engineers in the fundamental principles and applications of additive manufacturing and design. Specific objectives for online students taking the AMD Certificate are to:

1. Apply foundational knowledge, critical thinking, problem solving, and creativity in the uses of additive manufacturing across industries.
2. Become competent engineers in additive manufacturing while maintaining the highest ethical standards in applying additive manufacturing to industry-relevant problems.
3. Identify the barriers to industry adoption associated with additive manufacturing technologies.
4. Articulate the value proposition for additive manufacturing in a given industry.

## Contact

<b>Campus</b>	World Campus
<b>Graduate Program Head</b>	Allison Michelle Beese
<b>Director of Graduate Studies (DGS) or Professor-in-Charge (PIC)</b>	Allison Michelle Beese
<b>Program Contact</b>	Mariah L Germello Room 104, The 230 Building University Park PA 16802 mld5449@psu.edu (814) 865-2771
<b>Program Website</b>	View ( <a href="https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-additive-manufacturing-and-design-graduate-certificate/overview/">https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-additive-manufacturing-and-design-graduate-certificate/overview/</a> )