

MICROFABRICATION GRADUATE CERTIFICATE

Banner Code: EC-CERG-MICF

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Microfabrication involves the process of creating miniature structures on a micro or nanometer scale. It plays a crucial role in the semiconductor, biomedical, and other industries, being responsible for producing electronic devices such as computer chips, memory devices, and sensors. The certificate program in microfabrication is designed to equip students with the skills needed for the growing job opportunities in this field. Students will gain a solid understanding of advanced materials and sensors, along with hands-on experience. They will also learn about device design principles. Upon completing the certificate program, students will possess the ability to comprehend the unique properties of materials and device performance at the nanoscale. They will be able to fabricate microsensors within a cleanroom environment and operate key instruments used in the cleanroom.

Admissions & Policies

Admissions

The following admission requirements apply to all graduate program applicants across the university. All applicants must:

- Submit a completed online application for graduate study.
- Submit a nonrefundable application fee.
- Submit one unofficial transcript from all institutions previously attended.
- Have earned a baccalaureate degree from a regionally accredited institution of higher education, or international equivalent.
- Have earned a minimum 3.00 GPA on a 4.00 scale in baccalaureate study.

Students who have not earned a baccalaureate degree in the U.S. must submit:

- Official English translations of all diplomas, certificates, and transcripts that are not already in English. Also, documents from foreign institutions must meet the university's guidelines for international transcript submission.
- Proof of English proficiency: either the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS) academic exam, or the Pearson Tests of English (PTE) meeting the minimum requirements:
 - TOEFL: 88 points total and a minimum of 20 points in each section for the internet-based test (IBT) or 570 for the paper-based test (PBT)
 - IELTS: 6.5 total band score
 - PTE: 59 overall score.

In addition to the admission requirements for all George Mason University graduate program applicants, the Department of Mechanical Engineering will require applicants to have earned an undergraduate degree in engineering, physics, chemistry, or biochemistry. Applicants seeking to

enroll without a degree meeting this requirement must seek approval, in writing, from the program director.

Policies

For policies governing all graduate certificates, see AP6.8 Requirements for Graduate Certificates (<https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-8>).

Requirements

Certificate Requirements

Total credits: 12

This certificate may be pursued on a full-or part-time basis.

Code	Title	Credits
ME 754	Introduction to Nano-Materials	3
ME 762	Nano Bio Sensors	3
ECE 584	Semiconductor Device Fundamentals	3
PHYS 512	Solid State Physics and Applications	3
Total Credits		12