SOFTWARE ENGINEERING GRADUATE CERTIFICATE

Banner Code: EC-CERG-SWE

Academic Advising

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This graduate certificate program provides knowledge, tools, and techniques to those who are working in or planning to work in software engineering, but do not want to complete requirements for a master's degree in the field. The certificate may be pursued concurrently with any of the graduate degree programs in the College of Engineering and Computing (http://catalog.gmu.edu/colleges-schools/engineering-computing/).

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

Admissions & Policies

Admissions

In addition to general admission requirements (https://www.gmu.edu/admissions-aid/apply-now/how-apply/graduate/) of the university,   applicants must have earned a GPA of 3.00 or better on a 4.0 scale in the last 60 credits of their baccalaureate degree. Other application requirements are as follows:

- A one-page statement of educational and career goals
- Current resume
- Internationally-educated students must submit their English Proficiency scores (https://www2.gmu.edu/admissions-aid/how-apply/graduate/standardized-test-information/)

Admissions requirements to the Graduate Software Engineering Certificate are exactly the same as the admissions requirements for the Software Engineering MS program.

Admission into the certificate program does not guarantee acceptance into any MS program.

Policies

Students must complete four courses with an average GPA of 3.0 or higher for a total of 12 credits of graduate study.

For policies governing all graduate certificates, see AP.6.8 Requirements for Graduate Certificates. (http://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.

Students must complete all requirements within a concentration.

Concentration in General (GEN)

Code	Title	Credits
Select three courses from the following:		9
SWE 619	Object-Oriented Software Specification and Construction	
SWE 621	Software Design and Architecture	
SWE 632	User Interface Design and Development	
SWE 637	Software Testing	
Select one course from the following: [1]		3
CS 675	Distributed Systems	
CS 706	Concurrent Software Systems	
SWE 620	Software Requirements Analysis and Specification	
SWE 625	Software Project Management	
SWE 626	Software Project Laboratory	
SWE 631	Software Design Patterns	
SWE 632	User Interface Design and Development	
SWE 637	Software Testing	
SWE 645	Component-Based Software Development	
SWE 681	Secure Software Design and Programming	
SWE 699	Special Topics in Software Engineering	
SWE 721	Reusable Software Architectures	
SWE 760	Software Analysis and Design of Real-Time Systems	
SWE 763	Software Engineering Experimentation	
SWE 795	Advanced Topics in Software Engineering	
SWE 798	Research Project	
SYST 621	Systems Architecture Design	
Total Credits		12

[1]
 Subject to satisfying the prerequisites

Notes:
Students enrolled in the MS in Information Systems Program must substitute SWE 620 Software Requirements Analysis and Specification for INFS 622 Information Systems Analysis and Design to obtain this certificate. Credit is not given for taking both INFS 622 Information Systems Analysis and Design and SWE 620 Software Requirements Analysis and Specification; only 3 credits will be awarded.

Students enrolled in the MS in Computer Science Program may obtain a certificate in software engineering by taking any four SWE courses. If CS 706 Concurrent Software Systems is included, it is possible to complete the MS in Computer Science and the certificate in software engineering in 30 hours.

Concentration in Web-Based Software Engineering (WBSE)

Code	Title	Credits
Required Courses:		
SWE 632	User Interface Design and Development	3
SWE 642	Software Engineering for the World Wide Web	3
Select two from the following:		6
CS 550	Database Systems	
ISA 656	Network Security	
SWE 619	Object-Oriented Software Specification and Construction	
SWE 621	Software Design and Architecture	
SWE 637	Software Testing	
SWE 645	Component-Based Software Development	
SWE 681	Secure Software Design and Programming	
Total Credits		12