

# GRADUATE CERTIFICATE IN SOFTWARE ENGINEERING

For more information, including advice on how to apply and obtain the certificate, please visit the department's website (<https://cs.sfsu.edu/graduate-certificates/>).

## Admissions Requirements and Procedure

Selection for admission to the program will be based on applicants' academic background, work experience, and personal recommendations. We have two distinctive admissions procedures: one for matriculated graduate students at SF State and another for area professionals and non-SF State students who have completed a minimum of a Bachelor's degree from an accredited university or college with a 3.0 GPA or better.

A continuing SF State graduate student wishing to be admitted to a graduate certificate program at San Francisco State University is expected to follow the University requirements and procedures outlined herein. Such requirements and procedures may include a supplementary application, a defined set of prerequisite courses, a designated GPA, written recommendations, etc., as may be appropriate for the program in question. **To start the admission process please complete the form Certificate Admissions Application for Continuing SF State Graduate Students (<https://powerforms.docuform.net/b79b4024-2cad-4b1e-bc17-b5f4d844d8fa/?env=na3&acct=223bf8e1-bc14-478b-8607-15b5be78981f&accountId=223bf8e1-bc14-478b-8607-15b5be78981f>) and sign it with DocuSign application. Student will be then be contacted by graduate office and/or designated advisor.**

For non-matriculated SF State students, the certificate is available through application to CalState Apply (<https://www.calstate.edu/apply/>) for any student applicant who is eligible to take the required courses and has earned a Bachelor's degree.

## Program Learning Outcomes

1. Learn modern software engineering technologies used to develop, test, deploy, and manage software (SW) applications.
2. Learn best practices of modern software engineering processes and organization including those applicable to global (distributed) organization of SW projects.
3. Learn to apply modern tools for team-based SW development.
4. Learn to apply best practices of effective SE teamwork in locally and globally organized projects.
5. Learn selected advanced SE technologies and topics via elective course offerings.

## Graduate Certificate in Software Engineering - 12 units

### Core Requirements (6 units)

| Code    | Title  | Units |
|---------|--|-------|
| CSC 847 | Cloud and Distributed Computing: Concepts and Applications | 3     |
| CSC 848 | Software Engineering                                       | 3     |

### Core Options (3 units)

Select one:

| Code    | Title                                       | Units |
|---------|---|-------|
| CSC 780 | Application Development for Mobile Devices  | 3     |
| CSC 867 | Internet Application Design and Development | 3     |

### Elective (3 units)

Select one:

| Code    | Title  | Units |
|---------|--|-------|
| CSC 720 | Advanced Operating Systems                                 | 3     |
| CSC 746 | High-Performance Computing                                 | 3     |
| CSC 841 | Computer Performance Evaluation                            | 3     |
| CSC 842 | Human-Computer Interaction                                 | 3     |
| CSC 847 | Cloud and Distributed Computing: Concepts and Applications | 3     |
| CSC 849 | Search Engines   | 3     |
| CSC 868 | Advanced Object Oriented Software Design and Development   | 3     |
| CSC 874 | Topics in Big Data Analysis                                | 3     |
| CSC 899 | Independent Study  | 3     |