Software Engineering, Analysis, and Design

A software engineer is a person who applies the principles of software engineering to the design, development, maintenance, testing, and evaluation of the software and systems that make computers or anything containing software work. The Graduate Certificate in Software Engineering, Analysis, and Design aims to cover those areas in a compact program.

Who is suited for this program?

This graduate certificate is best suited for students holding an undergraduate degree in electrical engineering, computer engineering, computer science, or those willing to take a number of ancillary courses.

What will I learn?

This certificate program covers:

- Key software engineering principles, methods and frameworks, including process models, agile and lean principles, project and risk management, estimation, modeling, system and software architecture, design patterns, and quality systems.
- Hands-on experience in managing database systems as an essential organizational resource.
- Development of large software systems and the integration of multiple systems into a domain dependent solution.
- Modern techniques and methods employed in the development of large software systems, including a study of each of the major activities during the lifetime of a software system, from conception to obsolescence and replacement.
- Software management technique, various software costing techniques including COCOMO and ROI, team organization and management, and various methods of software development including Cleanroom and Agile.

Why study software engineering at NJIT?

The program's narrow focus allows you to dig deep into this specific topic, and start applying your knowledge sooner. It's possible to some of the courses online, so you can more easily fit the program into your busy life. And whether you take courses online or on campus, you'll learn from NJIT's distinguished professors and instructors of the College of Computing Sciences.

Prerequisites

NJIT's standard admission requirements apply to this graduate certificate, but individual courses within the program have additional prerequisites.

Note: Students lacking background relevant to NJIT's IS 513, IS 531 or IS 565 courses may need to take a placement exam, or take undergraduate bridge courses at NJIT or elsewhere. Please, contact the IS department for details. More information is found here (http://is.njit.edu/academics/graduate/PlacementExam.php).

Related Degree Programs

All credits from the Software Engineering, Analysis, and Design Graduate Certificate can be applied toward the NJIT M.S. Information Systems (http://catalog.njit.edu/graduate/computing-sciences/information-systems/ms/) or M.S. Software Engineering (http://catalog.njit.edu/graduate/computing-sciences/computer-science/software-engineering-ms/)

Take Note

What are the Required Courses?

Code	Title	Credits
Core Courses		
Select one or two of the following:		3-6
IS 663	System Analysis and Design	3
CS 673	Software Design and Production Methodology	3
Electives		
Select two or three of the following:		6-9
IS 631	Enterprise Database Management	3
CS 631	Data Management System Design	3
IS 676	Requirement Engineering	3
CS 683	Software Project Management	3
CS 684	Software Testing and Quality Assurance	3