Certificate in Computer Science (12 credits)
Training Computer Science Professionals

This certificate program provides essential skills for **computing professionals** interested in designing and developing a variety of software systems. This includes the theoretical foundations of computer science and practical applications of database design, programming and software engineering.

The curriculum focuses on the core skillset needed by all computer science professionals: logic and discrete math, programming, and data management. Participants will learn how to evaluate important computer algorithms, build and maintain efficient database systems, and gain the advanced programming skills to continue their software development career. The program consists of 4 courses of 3 credits each, taught over 2 semesters of 15 weeks each. Instruction includes formal lectures as well as hands-on coding projects.

In this program, we make use of software tools such as MySQL, integrated development environments like Eclipse, and various high-level programming languages (C++, Java, and Python). Students work on assignments and projects covering both theory and applications with guidance from the professor and teaching assistants.

Recommended part-time credit schedule: First semester: 6, Second semester: 6. Total: 12 credits over two semesters (incl. summer).

Core (required) courses:

CS 506	Foundations of Computer Science
CS 631	Data Management System Design

Sample electives:

CS 602	Java Programming
CS 632	Advanced Database System Design
CS 634	Data Mining
CS 635	Computer Programming Languages
CS 644	Introduction to Big Data
CS 645	Security and Privacy in Computer Systems
CS 656	Internet and Higher Layer Protocols
CS 673	Software Design and Production Methodology
CS 675	Machine Learning

Credit earned in this Certificate program can be used later towards the MS in Computer Science degree.

Program Outcomes:
- Develop a professional working knowledge of one or more high-level programming languages.
- Comfortably assess the run-time efficiency of a given computer algorithm and identify common logic errors in software design.
- Build a robust and secure database system – from design to implementation – for a wide range of purposes.

Tuition + fees for ALL non-F1 students (independent of residency and visa status) at 2019-20 rates, assuming two courses per consecutive semester: Fall semester: $6,366. Spring semester: $6,366. Summer semester: $5,421.

Total tuition + fees for Certificate: Fall start: $12,732. Spring start: $11,787. Summer start: $11,787.

For more information, contact Tim Hart, ph: (973) 596-2911, (862) 234-5706, hart@njit.edu, or visit https://jerseycity.njit.edu