



BS Computer Science

Knowledge outcomes:

Upon successful completion of this program students will be able to:

- › Demonstrate in-depth knowledge in the areas of Programming techniques and use of programming languages; analysis and design of systems; the applicability of computer technologies for business, as well as knowledge of abstract concepts and principles of computer science;
- › Achieve an adequate level of understanding of mathematical principles underpinning Computer Science;
- › Analyze, implement and manage computer systems in their technical and managerial dimensions;
- › Have a foundation in science and liberal studies as delivered through the general education program;
- › Explain the principles and theories of ethical decision-making and their practical implications in the everyday conduct of business as well as the social context in which computer technology operates; and
- › Pursue postgraduate studies or professional qualifications in the fields of programming, software engineering and IT systems support and administration.

Skills outcomes:

As a result of completing this program, students should have acquired the following skills and values:

- › effective written and oral communication skills; demonstrate analytical and critical-thinking skills necessary to make sound technical and managerial decisions;
- › numeric and quantitative skills including data analysis and interpretation as well as a proficient understanding of mathematics essential for computer science professionals;
- › effective use of communication and information technology for business applications;
- › effective self-management in terms of time, planning and behaviour, motivation, self-starting, individual initiative and enterprise; and
- › self-awareness, openness and sensitivity to a diverse group of people, both in business and from other cultures.

Start Dates: October; February

Assessment: A variety of methods of assessing students progress are used including essays, reports, critical analyses, presentations, online assignments and discussions and proctored and open book examinations.

Possible Career Options:

Computer Science graduates may be employed in the professional fields of computer systems programming, software engineering, networks support and administration, database design and management, systems analysis and testing, Internet and web design, and more. The role is most often challenging, varied and exciting. Given the paramount role of computer systems in business applications, computer science professionals form an essential part of the technical and managerial staff of the contemporary private or public organisation. Our Computer Science graduates have found jobs in programming, telecommunications management, software engineering, technical support and administration and systems design, primarily in the service sector (telecommunications providers, web development firms, financial services etc.).

BS / COMPUTER SCIENCE

General Education - 30 credits

COURSE		CREDITS
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You must take these five courses = 15 credits

1	Composition I	3
2	Composition II	3
3	College Algebra (required)	3
4	US History course	3
5	Computer Applications I	3

Select **4** of the following 7 areas = 12 credits

1	Natural Science course	3
2	Psychology of Adjustment (required)	3
3	Western Civilization course	3
4	Other World Civilizations	3
5	Humanities course	3
6	Arts course	3

Take **1** course from any category = 3 credits

	Elective general education course	3
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New York College Concentration Prerequisites - 46 credits (plus any concentration relevant electives)

COURSE		CREDITS
1	Computer Applications II	3
2	Introduction to Computing - C++	4
3	Discrete Mathematics I	3
4	Data Structures (prerequisite Intro to Computing, Math)	3
5	Finite Mathematics	3
6	Statistics for Business	3
7	Operating Systems (prerequisite Intro to Computing)	3
8	Principles of Management	3
9	Design and Analysis of Algorithms	3
10	Human Computer Interaction	3

Advanced level courses to be taken after student has earned 40 credits and taken introductory level prerequisite courses

11	Organizational Behavior (pre-req. Psych. Adj.)	4
12	System Analysis and Design	4

Elective credits (either or both NYC and ESC)

Empire State College Concentration Courses - 32 credits

COURSE		CREDITS
1	Data Communications and Networking	4
2	Database Systems	4
3	Programming in JAVA	4
4	Ethics for a Global Economy	4
5	Computer Security	4
6	Software Engineering	4

Electives

	Artificial Intelligence	4
	Final Project in Computer Science	4
	Design for Programming Languages	4
	Project Management in Info. Sys.	4
	WEB Publishing w. HTML (pre-req.: Com. App. 1 & 2)	4
	WEB Systems Dev. (pre-req.: C++, Database Systems)	4
	Senior Seminar (to be taught by visiting ESC faculty)	4
	Educational Study Tour	4

