Computer Science

STEM

♦ TRANSFER DEGREE   Ⓜ MIDDLETOWN CAMPUS

Program Description

The Associate in Science degree program in Computer Science is designed for students of mathematics and science who wish to pursue a Bachelor of Science degree in Computer Science at senior colleges and universities. Its goal is to prepare the students for a successful transfer into such degree programs.

The curriculum is structured to emphasize scientific applications and the theoretical concepts which underlie computer design and development, languages, and systems. The program provides the core courses that would be encountered in the first two years of study at most four-year institutions.

Associate degree core courses in calculus, linear algebra, discrete math, digital electronics, computer science, data structures and assembly language programming constitute the nucleus of this program. Selected courses in the liberal arts support and enhance this central core.

To initiate this plan of study, students must have tested into college algebra (MAT 121) or higher on the mathematics placement test. Students who do not meet the math requirement can be successful in reaching their academic goals by taking foundation courses and extending the program to three years.

Program Outcomes

Students will:

- demonstrate ability in problem solving and communicating algorithms clearly, utilizing structures/top-down algorithm design processes.
- demonstrate familiarity with a wide variety of abstract data structures and data encapsulation concepts.
- demonstrate knowledge of assembler language programming as it applies to computer architecture and operating systems.
- demonstrate ability in computational methods of mathematics and physical science necessary for computer modeling.

Admission Criteria

Admission to this program requires that students be high school graduates or have high school equivalency diplomas (HSEs). If students are home schooled, they may be eligible for admission.

Transfer Options

SUNY Orange has special relationships with upper-level colleges and universities for transfer. These transfer institutions include:

- Clarkson University
- Florida Memorial University
- Marist College
- Rensselaer Polytechnic Institute
- St. John's University
- SUNY Binghamton
- SUNY Buffalo
- SUNY Institute of Technology
- SUNY New Paltz
- SUNY Oneonta
- SUNY Purchase

Click here for more information about "seamless" transfer to other four-year SUNY schools:

Your Career Coach

Career opportunities exist in the following fields:

- computer engineering
- computer systems analysis
- education
- computer programming
- cryptology
- applied mathematics
- financial analysis

Computer Science Gateway Courses:

- Gateway courses: CSC 138

SUNY Orange

- Key courses: CSC 101, CSC 138

Courses above have been recommended by the department to help introduce you to the program (Gateway courses) and guide you in selecting courses that will provide you with the best academic experience (Key courses and suggested Electives).

First Semester

Course #	Course Name	P, C, P/C	Cr
ENG 101	Freshman English 1 (G10A [w] & G11A)	P	3
_____	Restricted SUNY Social Sciences* (G3A & G6A)		3
CSC 138	Intro to Applied Logic through Scripting (G11A)		3
MAT 205	Calculus 1 (G1A)	P	4
COM 101	Foundations of Communication (G10A [o] & G11A)		3
	Total Semester Credits		16

Milestones
During this semester, students should:

- Meet with your newly assigned "department" advisor to plan your second semester
- Consider joining the student-led Computer Club

Second Semester

Course #	Course Name	P, C, P/C	Cr
ENG 102	Freshman English 2 (G7A & G12A)	P	3
_____	Restricted SUNY Elective**		3
MAT 206	Calculus 2 (G1A)	P	4
CSC 101	Computer Science 1	P	4
EET 104	Digital Electronics 1	P	4
	Total Semester Credits		18

Milestones
During this semester, students should:

- Meet with department advisor to plan third semester

Third Semester

Course #	Course Name	P, C, P/C	Cr
CSC 102	Computer Science 2	P	4
CSC 204	Computer Organization & Assembly Language	P	3
_____	Restricted SUNY Natural Sciences*** (G2A)		4
MAT 211	Linear Algebra (G1A)	P	3
_____	Restricted Elective****		3
	Total Semester Credits		17

Milestones
During this semester, students should:

- Investigate and apply for summer internships
- Schedule mock interviews through the Career Services Office or the Computer Science Department
- If continuing studies, research and apply to transfer schools

Fourth Semester

Course #	Course Name	P, C, P/C	Cr
CSC 201	Data Structures	P	3
_____	Restricted SUNY Natural Sciences*** (G2A)		4
MAT 120	Introduction to Statistics (G1A)	P	3
MAT 136	Discrete Mathematics (G1A)	P	3
	Total Semester Credits		13

Milestones
During this semester, students should:

- Apply for graduation

- If continuing studies, finalize planning with chosen transfer school
- Investigate summer internships

TOTAL DEGREE CREDITS: 64

Notes:

*Must satisfy both G3A (SUNY Social Sciences) and G6A (SUNY Diversity) requirements

**Select from G4A (SUNY US History & Gov) or G5A (SUNY World History)

***Students should consult with their advisor. Select one of the following pairs of courses: PHY 105 & PHY 106; or BIO 101 & BIO 102; or CHM 101 & CHM 102; or PHY 101 & PHY 102. Some four-year SUNY schools specifically require PHY 105 & PHY 106 to satisfy their B.S. in Computer Science programs. Students should carefully select which Natural Science to pursue and are urged to consult with an adviser if there is a concern.

****Select from CIT 103, CIT 105, CIT 117, CIT 118, or department approval