**Computer Science**

Degree Awarded: Associate in Science

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**Recommended Course Sequence**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENG 101</td>
<td>Freshman English 1</td>
<td>3</td>
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<tr>
<td>____</td>
<td>SUNY Social Science (GE 3)</td>
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<tr>
<td>CSC 101</td>
<td>Computer Science 1</td>
<td>4</td>
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</tr>
<tr>
<td>MAT 205</td>
<td>Calculus 1</td>
<td>4</td>
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<tr>
<td>COM 101</td>
<td>Foundations of Communication</td>
<td>3</td>
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<tr>
<td>PES 100</td>
<td>Concepts of Physical Wellness</td>
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<tr>
<td><strong>Second Semester</strong></td>
<td></td>
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<tr>
<td>ENG 102</td>
<td>Freshman English 2</td>
<td>3</td>
<td></td>
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<tr>
<td>HIS ___</td>
<td>Restricted History Elective*</td>
<td>3</td>
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<tr>
<td>MAT 206</td>
<td>Calculus 2</td>
<td>4</td>
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<tr>
<td>CSC 102</td>
<td>Computer Science 2</td>
<td>4</td>
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</tr>
<tr>
<td>EET 104</td>
<td>Digital Electronics 1</td>
<td>4</td>
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<tr>
<td>PES ___</td>
<td>Physical Education</td>
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<tr>
<td><strong>Third Semester</strong></td>
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<tr>
<td>PHY 101 or PHY 105</td>
<td>General Physics 1 w/calculus</td>
<td>4 or 4</td>
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<tr>
<td>MAT 211</td>
<td>Linear Algebra</td>
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<tr>
<td>CSC 201</td>
<td>Data Structures</td>
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<tr>
<td>____</td>
<td>Restricted SUNY Elective***</td>
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<tr>
<td><strong>Fourth Semester</strong></td>
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<tr>
<td>PHY 102 or PHY 106</td>
<td>General Physics 2 w/calculus</td>
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<tr>
<td>MAT 125</td>
<td>Introduction to Statistics</td>
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<tr>
<td>MAT 136</td>
<td>Discrete Mathematics</td>
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<tr>
<td>CSC 204</td>
<td>Computer Organization &amp; Assembly Language Prog.</td>
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<tr>
<td>____</td>
<td>Electives</td>
<td>2/4</td>
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</table>

Total Credits: 65-67

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**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.

**Admission Criteria**

Admission to this program requires that students be high school graduates or have high school equivalency diplomas (GEDs). If students are not high school graduates, they may be eligible for admission to the College's 24 Credit Hour Program. If students are home schooled, they may be eligible for admission. (See pages 7 through 13 for more details on the admission process for all applicants.)

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*SUNY American History (GE 4) or Western Civilization (GE 5) or Other/World Civilization (GE 6).

**Consult catalog of the college to which you intend to transfer. Some require the General Physics with calculus.

***SUNY Arts (GE 8) or Foreign Language (GE 9) lists or any list not selected from in Second Semester SUNY History Elective above.
**Student Learning 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.

**Career Opportunities**

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

**Transfer Opportunities**

SUNY Orange has special relationships with upper-level colleges and universities for transfer.

These transfer institutions include:

- Clarkson University
- Florida Memorial University
- Marist College
- R.P.I. (Rensselaer Polytechnic Institute)
- St. John’s University
- SUNY Binghamton
- SUNY Buffalo
- SUNY Institute of Technology
- SUNY New Paltz
- SUNY Oneonta
- SUNY Purchase

**Contact Information**

Applied Technologies
Department Chair
(845) 341-4523
Admissions Office
(845) 341-4030

www.sunyorange.edu