COMPUTER SCIENCE

DEGREES, CERTIFICATES AND AWARDS
Associate in Science Degree (A.S.)

DESCRIPTION
Computer Science is the study of computer software design, development, and programming. Computer scientists seek to advance the fundamental understanding of how information is processed, as well as the practical design of software and hardware to accomplish specific functions. This Associate in Science degree requirements are designed to satisfy core requirements for many Computer Science transfer patterns. However, students should consult a counselor and especially the catalog of the intended transfer institution for specific transfer requirements in the major. Some transfer institutions require Physics for example.

PROGRAM LEARNING OUTCOMES
1. Manage a programming project from start to finish, both individually and in teams.
2. Think critically and utilize qualitative and quantitative reasoning skills to design and implement an effective problem solution.
3. Apply algorithmic and symbolic thinking to the problem-solving process.

ASSOCIATE DEGREE PROGRAM
The Associate in Arts (AA) or the Associate in Science (AS) Degree involves satisfactory completion of a minimum of 60 semester units with a C average or higher, including grades of C in all courses required for the major, and fulfillment of all IVC district requirements for the associate’s degree along with all general education requirements. The degree provides a sound basis for transfer to upper division institutions for additional degrees or for higher vocational preparation. To be eligible to receive an Associate Degree, the student must complete the requirements for the major, the District requirements for an Associate Degree, and the General Education requirements. In addition, students must maintain a minimum grade point average and meet the minimum grade requirements of their program. Detailed information is available in the college catalog.

CAREER OPPORTUNITIES
Of the career opportunities identified many will usually require the completion of degree requirements at 4-year colleges and universities.

• Systems Programmer • Computer Scientist • Information Specialist
• Software Designer • Computer Systems Analyst • Programmer Analyst
• Computer Researcher • Technical Representative • Software Engineer
• Systems Administrator • Technical Coordinator • Systems Manager
• Security Systems Designer • Data Processing Application • Systems Programmer
• Database Programmer • Programmer • Technical Control Specialist
• Consultant • Database Administrator • Engineer Security Specialist
• Educator • Data Processing Manager • Data Mining Analyst
• Documentation/Technical Writer • Technical Product Support Personnel
• Technical Sales and Marketing Specialist • Management Information Specialist
• Scientific Application Programmer • Computer Operations Manager
• Computer Services Coordinator • Data Communications Manager
• Computer Graphics Specialist

Gainful Employment:
Federal regulations require institutions to provide students with Gainful Employment information for specific certificate programs offered at IVC. Please click on our Programs of Study link to view the information for each certificate program: http://www.imperial.edu/courses-and-programs/programs-of-study/

TRANSFER PREPARATION
Courses that fulfill major requirements for an associate degree at Imperial Valley College may not be the same as those required for completing the major at a transfer institution offering a bachelor’s degree. Students who plan to transfer to a four-year college or university should schedule an appointment with an IVC Counselor to develop a student education plan (SEP) before beginning their program.

Transfer Resources:
www.ASSIST.org – CSU and UC Articulation Agreements and Majors Search Engine
www.CSU Mentor.edu – CSU System Information
www.universityofcalifornia.edu/admissions/index.html - UC System Information
www.aicc.edu - California Independent Colleges and Universities, Association of
http://wiche.edu/wue - Western Undergraduate Exchange Programs

FINANCIAL AID
Paying for the cost of a college education requires a partnership among parents, students and the college. As the cost of higher education continues to rise we want you to know that IVC offers a full array of financial aid programs – grants, work study, scholarships, and fee waivers (we do not participate in the federal loan programs). These programs are available to both full and part-time students who are seeking a degree or certificate. For those who qualify, financial aid is available to help with tuition, fees, books and supplies, food, housing, transportation, and childcare. Please log onto our website for additional information: www.imperial.edu/students/financial-aid-and-scholarships/
# ASSOCIATE DEGREE PROGRAM

## COMPUTER SCIENCE MAJOR – A.S. DEGREE

Thirty-one (31.0) units required for the major.

ALL COURSES FOR THIS MAJOR MUST BE COMPLETED WITH A MINIMUM GRADE OF “C” OR BETTER.

I. **Required courses for the major (22.0 units)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 230</td>
<td>Intermediate Object Oriented Programming Using Java</td>
<td>4.0</td>
</tr>
<tr>
<td>CS 280</td>
<td>Assembly Language and Machine Organization</td>
<td>4.0</td>
</tr>
<tr>
<td>MATH 119</td>
<td>Elementary Statistics</td>
<td>4.0</td>
</tr>
<tr>
<td>MATH 192</td>
<td>Calculus I</td>
<td>5.0</td>
</tr>
<tr>
<td>MATH 194</td>
<td>Calculus II</td>
<td>5.0</td>
</tr>
</tbody>
</table>

II. **Select a minimum of nine (9.0) units from the following courses to include at least one (1) mathematics course, and (1) science course**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 180</td>
<td>General Biology: Molecules, Cells &amp; Genetics</td>
<td>4.0</td>
</tr>
<tr>
<td>BIOL 182</td>
<td>General Biology: Principles of Organismal Biology</td>
<td>4.0</td>
</tr>
<tr>
<td>CHEM 200</td>
<td>General Inorganic Chemistry I</td>
<td>5.0</td>
</tr>
<tr>
<td>CHEM 202</td>
<td>General Inorganic Chemistry II</td>
<td>5.0</td>
</tr>
<tr>
<td>CS 170</td>
<td>Introduction to Unix/Linux</td>
<td>3.0</td>
</tr>
<tr>
<td>MATH 230</td>
<td>Introduction to Linear Algebra with Applications</td>
<td>3.0</td>
</tr>
<tr>
<td>MATH 240</td>
<td>Discrete Mathematics</td>
<td>3.0</td>
</tr>
<tr>
<td>PHYS 200</td>
<td>General Physics I</td>
<td>5.0</td>
</tr>
<tr>
<td>PHYS 202</td>
<td>General Physics II</td>
<td>5.0</td>
</tr>
<tr>
<td>PHYS 204</td>
<td>General Physics III</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**Total Major Units: 31.0**

IVC Graduation Requirements and GE Pattern: 27.0

Electives (as needed to reach 60 degree applicable units)

**Total Maximum Units:** 60.0