Mission Statement Computer Science Program

The mission of the Computers Science (CS) program at Chaminade University of Honolulu is to help students acquire skills, knowledge, and habits which will be useful in career fields that are specifically related to computer applications. The Computer Science Program emphasizes the more technical aspects of the computing field in general, while the Computer Information Systems emphasizes the application of the computer in the business world.

One of the characteristics of the Marianist approach to education is to provide an integral education, by linking theory and practice and by combining liberal and professional education. The CS program strives to maintain an atmosphere in which the students learn the importance of understanding basic principles and practices by which the computing and information technology fields operate as well as of gaining practical skills that allow them to become productive citizens.

Another characteristic of the Marianist education is that it constantly adapts to the changing needs of the time. This is especially important in the computer information technology, in which advances in both the hardware and software are measured in terms of months. The faculty tries to maintain the curriculum which is fresh and relevant to meet the changing demands of the academic standards and societal needs.

Implicit in the Marianist philosophy of education, which considers the development of the whole person -- in their psychological, social, spiritual, moral, as well as intellectual dimensions -- is the importance of understanding ethical values. The CS program requires majors to take an upper-level course in ethics in order to help them become more sensitive to their social responsibilities.

Learning Outcomes of the Computer Science Program

After completing the Computer Science program leading to a Bachelor of Science degree, the student is expected to demonstrate the following outcomes:

- Understanding of the basic elements of the Computer Science field
  Supporting courses: CS110, CS150, CS330, CS350, CS360, CS410, CS420, CS430, CS460, CS470
- Basic skills in problem solving
  Supporting courses: CS150, CS240, CS420, CS430
- Ability to write computer programs in several programming languages
  Supporting courses: CS150, CS240, CS310, CS420
- Understanding of how the computer operates
  Supporting courses: CS330, CS360, CS410
- Basic understanding of data communication and network systems
  Supporting courses: CS460, CS470
- Ability to express ideas through oral and written communication
  Supporting courses: EN101, EN102, COM101, CS110
- Understanding of ethical responsibilities for computer professionals
  Supporting course: BU362

Program Goals B.S. Degree Computer Science (CS)

The overall goal of the computer science program is to provide an environment in which students can achieve stated learning outcomes. Computer Science at the undergraduate level has a well defined set of expectations in business and graduate Computer Science programs. The computer science seeks to meet these expectations by achieving the following goals.

1. **Operate a program demonstrably consistent with the programs recommended by the current *Computing Curricula* (currently 2005) and support documents developed by the Association for Computing Machinery (ACM) and adopted by the Institute of Electrical and Electronics Engineers (IEEE).**
   a) Skills and competencies are conveyed to the student through the required computer science and math courses.
   b) Textbooks are chosen which adhere to ACM curriculum recommendations.
   c) Courses are consistent with the ACM curriculum recommendations.
   d) Relevant Courses: CS110, CS150, CS240, CS310, CS330, CS350, CS360, CS410, CS420, CS430, CS460 plus one elective such as CS470.
   e) Support courses: MA110, MA308, MA331, MA401

2. **Computer Science is sometimes seen as "too hard" requiring too much math and science. The goal is to make the program accessible to students with less strong high-school math and science backgrounds.**
   a) Students can "start easy" in math with MA103, as opposed to beginning with calculus.
   b) No calculus is required for graduation. The only pre-major math class is MA110 Pre-calculus.
   c) Upper division math classes also require not calculus. MA331, MA308, MA401.
   d) Programming begins with CS150 using Visual Basic which is generally considered a more accessible language than C++ or Java. C++ and Java are introduced in CS240 and CS330; these languages will bring CUH students to a level of students in more fast-track programs at other universities.
   e) At the same time, more advanced students will be encouraged to take a higher math and science track including two or more years of math plus physics, chemistry and other sciences.

3. **Develop well rounded graduates with solid liberal arts education to complement the technical skills and knowledge acquired in computer science.**
   a) As a liberal arts university, students are required by the university to take a full set liberal arts
   b) Liberal arts courses include at a minimum these courses or equivalents: BU362 (for the major), EN101, EN102, COM101, a natural science lab course, EN201, HIST151, AR101, PH100, RE103, AN340 (global awareness), AN200, EC201, CJ332 (interdisciplinary), plus three upper division courses outside the major.

4. **Provide learning opportunities for students outside the normal curriculum and the classroom.**
   a) Create scale appropriate research projects supporting the topics taught in classes.
   b) Develop interesting courses such as games programming and bioinformatics
   c) Identify and cultivate internships in positions leading to careers in the field
   d) Develop service learning opportunities and encourage participation