

ICS 290 – Computer Science Careers: An exploration of the specialties of computer science.

Purpose and Objective of the Course

Having a goal and being motivated are two keys to great student academic performance. ICS 290, Computer Science Careers: An in-depth exploration of the specialties of computer science is designed to help the student formulate both.

The purpose and objective of this course is to help students early in their major to identify potential academic and career paths they wish to pursue. By the end of the course, students will have achieved the following learning objectives:

- Students will demonstrate an understanding of the philosophy, principles, policies, professional attitudes and ethical issues of several computer science specialties.
- Students will understand the needs of different computer science organizations including: industry, government and academia.
- Students will have knowledge of dozens of career opportunities in computer science specialties and understand what academic requirements are needed to work in those specialties.
- Students will have first hand exposure to experts working in computer science, the scope of computer science projects and skills required to execute those projects.
- Students will have knowledge of opportunities available before graduating (e.g., internships and undergraduate research projects).

Organization of the Course

Every two weeks students will meet to hear speakers from computer related organizations, visit computer organizations or participate in student group presentations. The discussion will focus on four topics.

- Ethical Issues and Professional Attitudes in Computer Sciences
- Computer Sciences in Industry (Small, Medium and Large Business)
- Computer Sciences in Government (Federal, State & County)
- Computer Sciences in Academia (Post baccalaureate education and careers)

At the end of class students will have made one group presentation on a computer science specialty area and submit an action plan for their career based on the contents of the course.

Syllabus: This class is one credit (CR/NC), with no prerequisites and meets every two weeks for 2.5 hours for a total of 20 class hours per semester.

Spring 2009 - Note that the schedule skips after Spring break (3/23-3/27)

Class	1	2	3	4	5	6	7	8
Date	1/16/09	1/30/09	2/13/09	2/27/09	3/13/09	4/3/09	4/17/09	5/1/09

Class 1: Introduction

- What careers are there in the world, US and Hawaii.
- The types of organizations and computer science needs in industry, government and academia.
- Assignment of computer science specialties for group research: Student groups will present their research of different computer science specialties in subsequent weeks. The class will then discuss the specialty areas.
- Discussion of how to develop an academic action plan to lead to a desired career in computer science.

Class 2: Ethical Issues and Professional Attitudes in Computer Sciences Specialties

- Presentation from computer related organizations, site visit or student group presentations focusing on ethical issues and professional attitudes.
- Discussion on the topic of ethical issues and professional attitudes.

Class 3: Computer Sciences in Industry (Small Business)

- Presentation from computer related organizations, site visit or student group presentations focusing on small businesses.
- Discussion of the academic requirements.

Class 4: Computer Sciences in Industry (Medium and Large Business)

- Presentation from computer related organizations, site visit or student group presentations focusing on medium and large businesses.
- Discussion on the differences between small, medium and large businesses.

Class 5: Computer Sciences in Government (State & County)

- Presentation from computer related organizations, site visit or student group presentations focusing on state & county organizations.
- Discussion on the differences between industry and government.

Class 6: Computer Sciences in Government (Federal)

- Presentation from computer related organizations, site visit or student group presentations focusing on the opportunities in the federal government.
- Discussion on ethical issues and professional attitude differences between industry and government.

Class 7: Computer Sciences in Academia (Post baccalaureate education)

- Presentation from computer academic related organizations, site visit or student group presentations focusing on graduate education.
- Discussion of the academic requirements for graduate school.

Class 8: Action plan discussions

- Student action plans due. Students will discuss their action plans for their career.

Text

The course will not use a textbook but rather a combination of guest speakers, lecture notes prepared by the instructor and on-line tutorial material about computer science specialties. One such online resourced is the Association for Computing Machinery website (<http://www.acm.org/>), which is the preeminent computer science professional organization. There are numerous publications available on the curricula requirements for different computer science specialty career paths.

Class Duration:

The first class and last class are fully planned classes, but the other six classes will be filled with multiple speakers and site visits. With speakers, there should be 30 minutes of discussion after the speakers leave. The site visits will need the full 2hours and 30 minutes.

Grading

To receive credit for the class, the student must:

- a. Must attend the first and last class meetings.
- b. Attend at least 5 of 6 presentation days or site visits.
- c. Satisfactorily complete the group computer specialty presentation
- d. Complete a career action plan.
- e, Participate in the class discussion.