UNIVERSITY OF NEBRASKA AT OMAHA
COURSE SYLLABUS/DESCRIPTION

Department and Course Number	CSCI 4950
Course Title	Internship in Computer Science
Course Coordinator	Stanley Wileman
Total Credits	1–3 (variable credit)
Date of Last Revision	June 12, 2003

1.0 COURSE DESCRIPTION

1.1 Overview of content and purpose of the course

The purpose of this course is to provide students with opportunities to apply their academic studies in environments such as those found in business, industry, and other non-academic organizations. The student interns will sharpen their academic focus and develop better understanding of non-academic application areas.

1.2 For whom course is intended

This course is intended primarily for juniors and senior in computer science who desire a supervised work experience prior to completion of their academic programs. Internships for international students will be coordinated with the International Studies department.

1.3 Prerequisites of the course (courses)

Permission of the program chair.

1.4 Prerequisites of the course (topics)

The specific topics appropriate as prerequisites for this course depend primarily on the requirements of the specific internship.

1.5 Unusual circumstances of the course

None

2.0 OBJECTIVES

2.1 Focus the student's basic skills by applying the concepts and techniques learned to everyday situations in a non-academic environment related to their background.

2.2 Ensure a positive and successful experience for both the student and the sponsoring organization.

2.3 Identify additional topics that will be useful to students when they leave the academic environment.

2.4 Provide sponsoring organizations with a point of contact for their internship requirements.

2.5 Provide a structured mechanism for matching a sponsoring organization's needs with a student's capabilities.

2.6 Build links between organizations that employ computer science graduates and the university.

2.7 Ensure that the sponsoring organization utilizes the student's skills in a manner that merits academic credit.

3.0 CONTENT AND ORGANIZATION

3.1 Topics to be covered in this course

The purpose of this course is to provide students with opportunities to apply their academic studies in environments such as those found in business, industry, and other non-academic organizations. The student interns will sharpen their academic focus and develop better understanding of non-academic application areas.

3.2 Organization

Each student intern will be paid by the sponsoring organization (but this requirement can be waived). The organization will identify a single point of contact (usually the immediate supervisor of the student intern), and Computer Science will identify a single point of contact for academic supervision, communication with the sponsoring organization, and with the student intern.

4.0 TEACHING METHODOLOGY

4.1 Methods to be used

This is an applied work experience where concepts learned in the academic setting are applied to real organization's typical application areas. Each student intern will be required to produce a report that evaluates their experience and discusses how their academic experience related to the organization's needs.

There are three possible approaches to administering this course.

4.1.1 A student with a possible internship in mind will contact the academic internship coordinator for the IS&T college and complete an initial application. The academic internship coordinator will have a faculty member in Computer Science evaluate the intern's proposed duties to determine if it has merit (that is, if the position will reasonably exercise the student's academic background, and if the student's background is adequate to meet the needs of the proposed position). If satisfactory, the student, the supervising faculty member, and the organization's representative will complete the Internship Agreement.

4.1.2 A student without a specific internship in mind can approach the academic internship coordinator for the IS&T college who will acquaint the student with the previously recognized but unfilled internship opportunities known at that time. The student, in consultation with a supervising faculty member, will select a proposed internship that is compatible with the organization's requirements and the student's background. If such an internship is identified, the student, the supervising faculty member, and the organization's representative will complete the Internship Agreement.

4.1.3 An organization can identify a possible internship opportunity to Computer Science or the IS&T college through a faculty member or the IS&T academic internship coordinator. After the internship is evaluated by Computer Science faculty, the internship is included in the set of opportunities for students who may then select the internship as in (4.1.1) or (4.1.2).

4.2 Student role in the course

Each student has the responsibility for satisfying employer expectations, for maintaining appropriate contact with the supervising faculty member, and for preparing and submitting the final written report at the conclusion of the internship.

4.3 Contact hours

This is a variable credit course. Students may obtain between one and three hours of credit in a semester. The actual number of hours of credit that may be obtained in a single semester depends on the number of hours the student devotes to the internship and the type of work being done. For the same number of working hours per week, an entry-level position will justify fewer credit hours than a more advanced position. At most six hours of academic credit can be obtained through internships.

5.0 EVALUATION

5.1 Types of student projects used for evaluation

Each student who enrolls in an internship will be evaluated using the following components.

5.1.1. Internship Sponsor's Evaluation The organization sponsoring the internship will be asked to provide a brief written evaluation of the student's contribution during the period of the internship. This evaluation (usually prepared by the intern's immediate supervisor) may be similar to that used for its other employees, or may be a special evaluation solely for the Computer Science intern. Computer Science will provide suggested sponsor evaluation formats if requested.

5.1.2. Intern's Written Report Each student intern will prepare a report about his or her internship experience. This report will normally be between ten and fifteen double-spaced pages in length, and presented to the Computer Science faculty supervisor on or before the date specified in the internship contract. The report must be submitted in machine-readable form as a Microsoft Word document using one-inch top and bottom margins, 1.25 inch left and right margins, and 12 point body text. The report may be published on the Computer Science web pages. The report must be of professional quality and address at least the following subjects (addressed from the intern's point of view):

5.1.2.1. Goals of the internship Provide a summary of the organization and its expectations of you as an intern. Identify the organization's goals, and to the appropriate extent, the organization's computational infrastructure as it affected your work.

5.1.2.2. Your role in achieving the goals Describe the work you did for the organization. Indicate the extent to which your activities were directed, and the extent to which you were permitted to use your own judgement and academic experience in making decisions. Identify specific hardware and software you used in achieving the organization's goals.

5.1.2.3. The relevance of your academic background to the internship From your perspective, what courses or topics were of most value to you in completing your internship? What additional courses or topics in existing courses might have been useful in completing the work?

5.1.2.4. Conclusion Indicate if your internship was successful. Describe the criteria you used in assessing your success.

5.1.3. Meetings between the faculty supervisor and the intern There will be one or more meetings between the faculty internship supervisor and the intern. During these meetings the progress of the internship will be evaluated to ensure appropriate academic goals are being met. The intern will be provided with a written report of this component of the evaluation.

5.1.4. Meetings between the faculty supervisor and the sponsor's representative There will be one or more meetings between the faculty internship supervisor and the sponsor's representative (usually the intern's immediate supervisor). During these meetings the intern's progress will be evaluated to ensure the organization's goals are being met. The intern may be provided with a written report of this component of the evaluation, although it is expected that the organization will provide each intern with this information on an ongoing basis.

5.2 Basis for determining the final grade

The weight of each component toward the overall evaluation may vary, but the first two components (5.1.1 and 5.1.2) will invariably constitute the principal factors affecting the evaluation.

5.3 Grading scale

The final numeric grade is used to determine a letter grade (typically, 90-100: A, 81-90: B, etc.)

6.0 RESOURCE MATERIAL

Resource materials used by student interns will vary depending on the particular employer sponsoring the internship. As noted in 5.1.2, selected written reports from student interns in previous semesters will be available on the Computer Science web. Additional material developed by the department for the use of interns will also be available on the web. Internship sponsors and faculty supervisors are provided with information concerning the administration of the program.

7.0 Estimate Computer Science Accreditation Board (CSAB) Category Content (class time in hours):

While it is impossible to accurately identify the CSAB categories to which a student will have exposure in an internship, it is expected that the majority of the time will be spent analyzing problems in an organization and developing solutions to these problems. An estimate of equivalent classroom hours is provided below.

CSAB Category	Core	Advanced
Data structures	6	2
Computer organization and architecture		
Algorithms and software design	30	7
Concepts of programming languages		

8.0 Oral and Written Communication

Every student is required to submit at least 1 written reports (not including exams, tests, quizzes, or commented programs) to typically 20 pages and to make 0 oral presentations of typically _____ minutes duration. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

9.0 Social and Ethical Issues

While academic study of social and ethical issues is not anticipated in an internship, the practical implications are that students will gain first-hand exposure to their implications. It is expected that some student written reports will address social and/or ethical issues.

10.0 Theoretical content

No theoretical content is anticipated in an internship, but this can certainly vary depending on the position occupied by the student.

11.0 Problem analysis

As noted earlier, it is expected that students in the internship will spend significant time alayzing problems and implementing solutions for the organization sponsoring their internship.

12.0 Solution design

As noted earlier, it is expected that students in the internship will spend significant time alayzing problems and implementing solutions for the organization sponsoring their internship.

CHANGE HISTORY

Date	***Change***	***By whom***	***Comments***
5/1/1998	Original version	Wileman	
6/12/2003	Added ABET-specific sections	Wileman	