

CS100 - Introduction to Professions

Last Updated – 02/06/02

Course Manager - Matthew Bauer, Senior Lecturer

2 credit hours; required for CS; 75 min. lecture & 75 min. lab each week

Current Catalog Description - An introduction to science and engineering as a profession. Examines the problem-solving process used in engineering and science. Emphasizes the interdisciplinary and international nature of problem-solving and the need to evaluate solutions in terms of a variety of constraints: computational, financial, and social. (1-2-2)

Textbook

- none

References - other textbooks or materials

- Rick Decker and Stuart Hirshfield, The Analytical Engine: An Introduction to Computer Science Using the Internet, PWS Publishing Company, <http://www.pws.com/aeonline/course/index.html>

Course Goals - Students should be able to:

- Demonstrate a basic understanding of the computer science concepts of: history of computing, binary arithmetic/logic/program translation, algorithms, computer architecture, operating systems
- Demonstrate basic problem solving, sorting and recursion using pseudocode.
- Apply the ACM Ethics Code to a real world computer science related scenario.
- Research and write, with multiple drafts, a computer science technology research paper utilizing library resources.
- Create and deliver a computer science theory teaching presentation or a computer science technology selling presentation.

Prerequisites by Topic

- no prerequisites

Major Topics Covered in Course

1. Goals	1 hour
2. History Of Computing	1 hour
3. Pseudocode & Problem Solving	2 hours
4. Binary Arithmetic Program Translation Logic	3 hours
5. Library Research - Cutting Edge Technologies	2 hours
6. Career Development Center – Resume; Counseling and Health Services	2 hours
7. PC Architecture	1 hour
8. Pseudocode & Sorting	2 hour
9. Operating Systems	1 hour
10. Ethics	1 hour
11. RobotWars	2 hours
12. Pseudocode & Recursion	2 hours
13. The Internet - Theory & Practice	5 hours
14. Presentation Skills	4 hours
Midterm Exam	1 hour
Final Exam	-
	30 hours

Laboratory projects (specify number of weeks on each)

- 11 labs (1 week per lab)

- Goals; Pseudocode & Problem Solving; Binary Arithmetic, Program Translation, Logic; Library Research; Library Research (peer review); Pseudocode & Sorting; Ethics; RobotWars; Pseudocode & Recursion; Internet I; Internet II

Estimate CSAB Category Content in Credit Hours

	CORE	ADVANCED		CORE	ADVANCED
Data Structures	0		Computer Organization and Architecture	1	
Algorithms	.5		Concepts of Programming Languages	.5	
Software Design	0				

Oral and Written Communications - Every student is required to submit at least __1__ written reports (not including exams, tests, quizzes, or commented programs) of typically __3__ pages and to make __1__ oral presentations of typically __7__ minutes duration. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

- Research and write, with multiple drafts, a computer science technology research paper.
- Create and deliver a computer science theory teaching presentation or a computer science technology selling presentation.

Social and Ethical Issues - Please list the topics that address the social and ethical implications of computing covered in all course sections. Estimate the class time spent on each topic. In what ways are the students in this course graded on their understanding of these topics (e.g., test questions, essays, oral presentations, and so forth)?

- Apply the ACM Ethics Code to a real world computer science related scenario.

Theoretical Foundations - Please list the types of theoretical material covered, and estimate the time devoted to such coverage in contact (lecture and lab) hours.

- Sorting, 2 hours
- Recursion, 2 hours
- Binary Arithmetic/Logic/Program Translation, 2 hours
- Computer Architecture, 1 hour
- Operating Systems, 1 hour

Problem Analysis - Please describe the problem analysis experiences common to all course sections.

- Demonstrate basic problem solving, sorting and recursion using pseudocode.

Solution Design - Please describe the design experiences common to all course sections.

- none

Other Course Information

- Additional Suggested Course Assignments
 - 1 midterm exam (75 minutes)
 - 1 Final Project Presentation - Create and deliver a computer science theory teaching presentation or a computer science technology selling presentation.
- Planned Course Enhancements
 - Update catalog description to be more CS specific (Fall 2002)
 - Stress problem solving, algorithms, recursion, and design independent of programming language. (Fall 2002)
 - Add more overviews of CS topics - databases/data mining, networks, programming languages/compilers, graphics, cryptography (Fall 2002)