

GEORGIA PERIMETER COLLEGE

COMMON COURSE OUTLINE

REVISION DATE: May, 2007

COURSE ABBREVIATION CSCI 1300

CREDIT HOURS 3

COURSE TITLE Introduction to Computer Science

PREREQUISITES Exit Learning Support and ESL

CATALOG DESCRIPTION

This course provides an overview of selected major areas of current computing technology, organization and use. Topics surveyed include the history of computing, data representation and storage, hardware and software organization, communications technologies, ethical and social issues, and fundamental problem-solving and programming skills. Hands-on projects enhance and reinforce the ideas presented in class.

EXPECTED EDUCATIONAL RESULTS

As a result of completing this course, the student will be able to:

1. Be familiar with the history of computing from ancient times to the present.
2. Be familiar with the methods by which data is represented and stored in a computer's memory.
3. Recognize and understand fundamental hardware components of any computer system.
4. Know fundamental software components needed by the computer hardware to communicate with the user.
5. Work effectively with a variety of software packages.
6. Choose the correct software package for the task at hand.
7. Understand the concepts of, and effectively use, current communications technologies, including electronic mail, on-line databases, search engines, and the World Wide Web.
8. Present information using multimedia techniques.
9. Recognize and understand social and ethical issues involved in computer use.
10. Analyze a real world problem and solve it with a computer program.

11. Write computer programs using the fundamental concepts of input/output, computations, decisions, repetitions, modular programming, and data storage.

GENERAL EDUCATION OUTCOMES

I This course addresses the general education outcome relating to communications as follows:

1. Students develop their reading comprehension skills by reading the text and handout materials.
2. Students develop their listening skills through lecture and small group problem solving. Lecture material is presented that is not included in the text or handout material and is included as part of the tests or assignments.
3. Students develop their reading and writing skills through the use of problems and activities, including computer-based research and analysis, use of existing computer programs, position papers, and development of computer programs and documentation, all developed specifically to enhance their understanding of computer science principles. Students provide written or oral solutions to these problems in either individual or group format. They must also answer short-answer type questions on course exams.

II This course addresses the general education outcome relating to problem-solving and critical thinking skills through assignments that take the student through problem-solving processes from understanding the problem all the way to finalizing a correct solution to the problem.

III This course addresses the general education outcomes relating to mathematical concept usage and scientific inquiry as follows:

1. Students apply mathematical concepts in the use of existing software as well as the development of computer programs by creating mathematically-based solutions to the assigned problems and communicating the results of those solutions to the program user.
2. Students apply the scientific method in the set-up and solution of the problems presented to illustrate computing principles.

IV This course addresses the general education outcome relating to organization and analysis of information using a computer by using the computer as a tool for the solution of problems designed to illustrate the concepts and principles of computer science.

ENTRY LEVEL COMPETENCIES

Upon entering this course the student should have exited developmental studies and meet the expected educational outcomes of the applied technology course ATEC 1201 or ATEC1203.

COURSE CONTENT

I Overview (5%)

II Data Representation and Storage (5%)

III Computer Hardware Concepts (15%)

IV Computer Software Overview (25%)

V Communications Technologies (15%)

VI Social and Ethical Issues (10%)

VII Problem Solving and Algorithm Development (15%)

VIII Fundamental Programming Concepts (10%)

ASSESSMENT OF EXPECTED EDUCATIONAL RESULTS

A. COURSE GRADE

1. The course

grade will be determined by the individual instructor using a variety of evaluation methods. The course grade must weigh examinations for at least 50% of the grade and assignments for not more than 50% of the grade. Eight to ten major projects covering varying aspects of the course must be assigned. Testing must consist of at least two examinations and a comprehensive final examination. The final examination must be weighted at not less than 25% nor more than 35% of the final course grade.

B. DEPARTMENTAL ASSESSMENT

1. This course will be assessed every five years. An appropriate assessment instrument will be determined by the CSCI course committee.

USE OF ASSESSMENT FINDINGS

The CSCI committee, or a special assessment committee appointed by the Academic Group, will analyze the results of the assessment and determine implications for curriculum changes. The committee will prepare a report for the Academic Group summarizing its finding.