# Georgia Perimeter College
## Common Course Outline

<table>
<thead>
<tr>
<th>Course Abbreviation &amp; Number:</th>
<th>CSCI 1300</th>
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<tbody>
<tr>
<td>Course Title:</td>
<td>Introduction to Computer Science</td>
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<tr>
<td>Credit Hours:</td>
<td>3</td>
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### Prerequisites:
- Exit Learning Support and ESL, and completion of MATH 1111 with a grade of “C” or better.

### Co-requisites:
- None

### Course 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. This course is intended for computer science majors, as well as mathematics and science-based majors. Students may NOT receive credit for both CSCI 1100 and CSCI 1300.

### 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. Understand basic networking and information security.
10. Recognize and understand social and ethical issues involved in computer use.
11. Analyze a real world problem and solve it with a computer program.
12. Write computer programs using the fundamental concepts of input/output, computations, decisions, repetitions, modular programming, and data storage.

General Educational Outcomes:

I) Students produce well-organized communication that exhibit logical thinking and organization, use appropriate style for audience and meet conventional standards of usage.
   a) Classroom and online discussion question require cogent and clear expression, and are expected to meet standard conventions of usage.
   b) 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 and oral solutions to these problems in either individual or group format.
   c) Students develop their communication skills by creating and presenting information in a clear, concise, and easy-to-follow manner using current software and network technologies.

II) Students demonstrate the ability to interpret and analyze quantitative information; apply mathematical principles and techniques; and to use mathematical models to solve applied problems.
   a) Students apply mathematical concepts to the analysis of algorithms and an understanding of fundamental hardware concepts, data representation, systems software, networking, and cryptography.
   b) Students apply mathematical concepts to the use of existing software by creating mathematically-based solutions to assigned problems designed to illustrate the concepts and principles of computer science, and communicating the results of those solutions to the software user.

III) Students demonstrate effective problem-solving and critical thinking skills through interpreting, presenting or evaluating ideas.
   a) Students apply problem solving methods in the design, set-up, implementation, and solution of numerous problems presented to illustrate computing principles.
   b) Critical thinking skills are applied extensively throughout the course requiring implementation of problem-solving processes that take the student from an initial understanding of the problem all the way through to
finalizing a correct solution to the problem.

IV) Students effectively analyze global economic, political, historical, cultural or geographic forces.
   a) Students explore and discuss ways in which computing technology has impacted society, culture, ethics, and the legal system, both at home and world-wide.
   b) Students explore the history of computing.

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 Outcome Objectives

Course Grade:

Grades from some combination of the following will be used to determine each student’s final course grade: homework assignments, lab and programming projects, class discussions, participation, and exams. 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. Exams may be multiple-choice, some combination of multiple-choice and free response questions, or purely free response questions. Within these guidelines, individual instructors may determine the relative weightings of each component in determining the grade for the course, and must state the specific weightings to be used in determining student grades in the course.
Course Departmental Assessment:

A. This course will be assessed in the spring semester on a three-year assessment cycle. Objective questions assessing student mastery of outcomes for this course will be included in the final exam. Each instructor must include these questions in the final exam. Each instructor is responsible for reviewing and tabulating the results of these outcome assessment questions and transmitting them to the department chair who will pass them on to the course or curriculum committee responsible for this course. Individual instructors should use feedback from assessment in their classes to review and evaluate their own teaching practices.

B. The construction of the outcome assessment questions will be the responsibility of the college-wide Computer Science Curriculum Committee.

Use of Assessment Findings:

The Computer Science Curriculum Committee will meet in the fall term after the spring assessment to review the course and to evaluate the results. The review of the course outcome assessment findings will provide information on success in achieving the desired outcomes for this course on a college-wide basis. If fewer than 70% of the students perform successfully on questions measuring any particular educational outcome, the committee will examine teaching practices related to that outcome, the assessment instrument, and the desired learning outcomes to determine which, if any, of these need modifying. The committee will share its findings and recommendations with all faculty teaching this course, and may make changes to the desired educational outcomes, teaching practices, or assessment instrument as appropriate.

Last Revised:
May, 2012