# Course Abbreviation & Number: CSCI 1100

## Course Title: INTRODUCTION TO COMPUTING

## Credit Hours: 3

### Prerequisites:

- Exit or Exemption from all Learning Support and ESL requirements.

### Co-requisites:

- None

### Course Description:

This course is intended for non-computer science majors. It 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, networking, and Internet technologies, ethical and social issues, and fundamental problem-solving and programming skills. Hands-on projects enhance and reinforce the ideas presented in class. 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 familiar with the history of computing from ancient times to the present.
- Understand the methods by which data is represented and stored in a computer’s memory.
- Recognize and understand the essential hardware components of any computer system, as well as the use of optional components to enhance the computer's capabilities.
- Understand the fundamental roles of systems software, particularly the operating system, and how it affects the user's computing experience.
- Be able to work effectively with application software packages to solve a wide variety of problems, including choosing the most appropriate software package for the task at hand.
- Understand the fundamental concepts behind computer networks and data communication.
- Understand and effectively use current Internet technologies, including electronic mail, on-line databases, search engines, the World Wide Web,
and various forms of social media.
- Be able to present information using multimedia techniques, including building simple web pages.
- Understand important information security issues and know appropriate measures to take to avoid problems in this area.
- Be able to recognize and understand the complexity of social and ethical issues involved in computer use.
- Analyze a real world problem and solve it with a computer program.
- Write simple computer programs using the fundamental programming concepts.

**General Educational Outcomes:**

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

A. Students develop their reading comprehension skills by reading the text and handout materials.

B. 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.

C. 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.

D. 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. 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:

A. Students apply mathematical concepts to the use of existing software by creating mathematically-based solutions to the assigned problems and communicating the results of those solutions to the software user.

B. 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 outcomes 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.

Course Content:

I. Overview and History of Computing Technology (5%)

II. Data Representation and Storage (10%)

III. Computer Hardware Concepts (10%)

IV. Systems Software Concepts (10%)

V. Applications Software Overview (15%)

VI. Computer Network/Data Communication Principles (10%)

VII. Internet Technologies (10%)

VIII. Computer and Network Security (5%)

IX. Social and Ethical Issues (10%)

X. Problem Solving and fundamental programming concepts. (15%)
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 syllabus.

**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:

December 5, 2011