AUBURN UNIVERSITY

Course Information

Course Number & Title: CPSC1213 Introduction to Computer Science

Credits: 3

Description

This course introduces the fundamentals of computing as well as certain aspects of software engineering which will enable you to construct logical, readable, and correct programs. An object-oriented approach to problem solving and program design will be emphasized in the class and reinforced in the activities and projects.

Course Objectives:

Upon completion of the course, you should be able to:

- Design and implement simple programs based on problem specifications
- Implement classes and methods when provided the object-oriented specifications
- Implement programs that use simple data structures and collections such as the ArrayList

Program Information

Program Educational Outcomes

The overall objective of the computer science program is to prepare graduates who will be successful in their chosen career paths. Within a few years of graduation, alumni of the computer science program will attain:

- PEO 1: Success in their chosen profession as evidenced by career satisfaction, promotions/raises, and leadership at levels appropriate to their experience.

and/or

- PEO 2: Success in post-undergraduate studies as evidenced by satisfaction with the decision to further their education, advanced degrees earned, and professional visibility (e.g., publications, presentations, awards, etc.).

Student Outcomes

The computer science program prepares students to attain the educational objectives by

ensuring that students demonstrate achievement of the following student outcomes.

- **SO 1:** An ability to identify, formulate, analyze, and solve problems, as well as identify the computing requirements appropriate to their solutions.
- **SO 2:** An ability to design, implement, and evaluate software-based systems, components, or programs of varying complexity that meet desired needs, satisfy realistic constraints, and demonstrate accepted design and development principles.
- **SO 3:** An ability to apply knowledge of computing, mathematics, science, and engineering appropriate to the discipline, particularly in the modeling and design of software systems and in the analysis of tradeoffs inherent in design decisions.
- **SO 4:** An ability to use current techniques, skills, and tools necessary for professional practice.
- **SO 5:** An ability to design and conduct experiments appropriate to the discipline, as well as to analyze and interpret data.
- **SO 6:** An ability to function effectively on multidisciplinary teams to accomplish a common goal.
- **SO 7:** An ability to communicate effectively with a range of audiences.
- **SO 8:** An understanding of professional, ethical, legal, security, and societal issues and responsibilities appropriate to the discipline.
- **SO 9:** An ability to analyze the impact of computing and software solutions in an individual, organizational, societal, global, and economic context.
- **SO 10:** A knowledge of contemporary issues appropriate to the discipline.
- **SO 11:** A recognition of the need for and an ability to engage in life-long learning and continuing professional development.

Course Details

Text and Resource List

Required Books:

- Lewis, J., & Loftus, W., (2017). *Java software solutions: Foundations of program design* (9th ed.). Boston, MA: Pearson.
    - (ISBN-13: 978-0134462028 or ISBN-10: 0134462025)

Additional Readings

Articles pertinent to each week's topics will be posted for students on Canvas.

Course Structure

The course will follow this general pattern:

1. At the start of each module, students will read the assigned textbook chapters
2. Students will watch a series of lectures on the topics covered in the module
3. Students will be encouraged to participate in a discussion forum for help in solving the practice problems
4. Before the end of the module, students will complete and submit their homework assignment for a grade.

Outline of Course

This course will be broken up into seven modules. The following outline presents the topics to be covered in each module.

Module 1: Introduction to Computer Science

Module 2: Data and Expressions

Module 3: Using Classes and Objects

Module 4: Writing Classes

Module 5: Conditionals and Loops

Module 6: More Conditionals and Loops

Module 7: Final Exam

Grading Methodology

Achievement in this course will be assessed through completion of the following activities:

Assignment Type	Points	Grade %
Activities	60	6%
Quizzes	180	18%
Projects	360	36%
Comprehensive Final Exam	400	40%
Total	1000	100%

Activities

Activities are intended to guide you through the composition of one or more Java classes that use the concepts introduced in the module.

Quizzes

Short, weekly quizzes will be given to ensure that you are understanding the material from the presentations and the readings.

Projects

Projects are intended to reinforce and extend the concepts by requiring you to write one or more Java classes based on a specification of requirements and design. Successful completion of the project will involve problem solving and require an understanding and application of the concepts covered in the module.

Comprehensive Final Exam

The final exam will cover the material in the presentations, readings, activities, quizzes and projects in each of the six modules.

Grading Scale

Grades are determined on straight percentages as follows:

Letter	Points	Range
A	900-1,000	90%+
B	800-899	80-89%
C	730-799	73-79%
D	600-729	60-72%
F	0-599	59% or less

Auburn uses a 4.0 grade scale. An A equals 4.0; B, 3.0; C, 2.0; D, 1.0; and F equals 0.0. Students must maintain a 2.0 average GPA in all courses in order to progress in this program. If addition, students must earn at least a D in each individual course in order to earn credit and progress to the next course. For more detailed information about university grading standards, please refer to information on the following link:

- [Auburn University Undergraduate Academic Policies on Grades](#)

Course Policies

Late Assignment Policy

It is very important that students submit work on time, or they will find it very difficult to catch up. All work in the course (e.g., projects, activities, exams, quizzes, etc.) will be due by 11:59 pm CT on the date noted on the class calendar. Any assignment that is submitted after the due date will have one letter grade (10%) deducted per 24 hours late for up to three days. After three late days, you will receive no credit. Students should reach out to their instructor immediately to discuss any concerns or to submit documentation of university-excused lateness.

Program Policies

Citation Expectations

All research work submitted should be properly cited using the ACM Style Guide (https://www.cs.ucy.ac.cy/~chryssis/specs/ACM-refguide.pdf). For more information and tools to assist you in writing and research, refer to the citation management tools provided through the Ralph Brown Draughon Library.

Faculty Communication and Feedback

At the beginning of each course, make sure that you understand the instructor's preferred mode of communication and any specific communication protocol. One of the best ways to be effective as a graduate student is to understand the instructor's expectations and operate within those boundaries. Students should give the instructor 48 hours to get back to them on any communication, and one week for grading turnaround time on major assignments. If students have concerns about communication or feedback, they should always go to the professor first. Students should explain their concern as clearly as possible without judgment or emotion. Effective communication is an important skill, and every interaction in their program is an opportunity to develop this skill.

Group Work

Some of the assignments in the program will be individual assignments (such as a quizzes, exams, or papers), where students are expected to work on their own and hand in original work to receive individual feedback. If this is the case you should not exchange code or writing with any other student.

However, in some courses in this program, students will also be assigned to work in groups. Many students do not like group work, because they feel that the workload is uneven or the grading is unfair or the challenge of organizing logistics is too great. However, as students advance in their careers, it becomes increasingly important to develop the skill of influencing others and working with them collaboratively. Similarly, in most workplaces, students will need to collaborate or negotiate with others in order to accomplish their goals.

Group work in this program offers students an opportunity to learn virtual team leadership and team theory. It is important that students treat their group members with the same respect that they would treat coworkers. Group members will become part of their professional network, so if students work effectively with them, they may become a lifetime resource.

Remember that everyone's style of communication is different, and that it is important to

listen carefully and adjust style when necessary to communicate effectively. Students should be proactive when they feel there might be a problem in the group. The problem will not improve if students do not address it.

Online Student Learning Expectations

All students in this course are expected to have completed the student orientation course. Through this orientation course, you will learn how to navigate the course and use the various tools that you will need in
order to participate effectively and submit assignments. You are also expected to have all the equipment and software needed to be successful in the course.

All students are expected to contribute to their own learning as active and well-prepared participants. Weekly modules will provide various opportunities for reading, reflection, applied experiences, collaboration, and writing. Since these activities are woven through the entire week and generally do not require your "electronic presence" at any particular time or day, there should be no need to "miss" class. You should plan on spending the same amount of preparation and "in class" time on this course as you would if you were taking the course face-to-face.

Be Patient and Stay Calm

Problems with technology will inevitably arise. Don't worry and just keep smiling. Please be patient with your instructor and your instructor will be patient with you. Your instructor will always take technical problems into account if the situation warrants it.

Logging On

The learning activities for each week are carefully sequenced and offered in small chunks so you can accomplish reasonable amounts throughout the week. You should log on to the course website regularly to work through course materials and participate in course discussions.

Posting Responses

Interaction between students is an important part of this course and requires prompt postings and responses. In an attempt to be efficient with our time and considerate of everyone's schedules—beyond the requirements of this course—we will operate under a consistent time structure for posting assignments and responses to online discussions.

Submitting Assignments

You will submit all other types of individually written assignments to the appropriate assignment dropbox. Unless otherwise noted, assignments will be due by 11:59 pm CT on the date noted on the class calendar.

Academic Integrity

Auburn University has adopted an Honor System proposed by its students and faculty to promote academic integrity and has enacted the following code:

"We, the faculty, instructors, and students of the (University course here) pledge to fulfill our mutual responsibilities to each other and the academic community at large with honor and integrity in order to build and maintain a climate of respect and trust that will enhance our research, teaching, and learning. We will support the Honor System of the School, and will not tolerate activities that undermine academic integrity."

Academic dishonesty is an offense that will be reported to the Academic Honesty Committee. Please refer to the following document for further information regarding academic honesty:

- [Auburn University Student Academic Honesty Code](#)

Accessibility

Students who need accommodations are asked to electronically submit their approved accommodations through AU Access and to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are immediately needed. If you need accommodations but have not established them, make an appointment with the Office of Accessibility, 1228 Haley Center, 334-844-2096.