Computer Science 111

Introduction to Computer Science I

Course Outline

Fall 2014

Lecture: Alden 101, Monday and Wednesday 9:00am to 9:50am
Lab: Alden 101, Thursday 2:30pm to 4:20pm
Practical: Alden 101, Friday 9:00am-9:50am or Thursday 1:30pm-2:20pm

Web page: http://cs.allegheny.edu/~jjumadinova/teaching/111.html
Sakai page: https://sakai.allegheny.edu/

Instructor:
Janyl Jumadinova
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Office phone: 814-332-2881
Email: jjumadinova@allegheny.edu
Office hours:
Monday: 10am-12pm and 4:30pm-5:30pm
Wednesday: 10am-12pm and 2:30pm-3:30pm
Thursday: 4:30pm-5:30pm
Friday: 11am-12pm
and by appointment

To schedule a meeting with me during my office hours, please go to
http://cs.allegheny.edu/~jjumadinova/schedule.html, click on
“Schedule an Appointment...” and select the desirable date and time. You
can schedule an appointment outside of my office hours by email.

Textbook:

Java Software Solutions: Foundations of Program Design, 8th edition, by
John Lewis and William Loftus.
The course:

An introduction to the principles of computer science with an emphasis on algorithmic problem solving and the realization of algorithms using a modern object-oriented programming language. Topics include algorithms, problem solving, programming, classes, primitive data types and objects, control structures, arrays and vectors, principles of object-oriented design and programming and an introduction to graphics and graphical user interfaces. The course also includes an overview of the discipline of computer science and a study of the social implications of computer use. May serve as the laboratory course in the Natural Science Division’s distribution requirement. One laboratory per week.

Prerequisite: Knowledge of elementary algebra.

The course follows three parallel tracks. In the lectures we will learn basic computer science fundamentals, in the practicals you will reinforce that knowledge with short practical exercises, while in the labs you will have a larger hands on experience with problem solving and writing programs. The labs and practicals will be tied to the lectures but not always.

The course page on Sakai will be used for announcements, assignments, and reporting student grades.

Course Goals:

- Become familiar with computational thinking and algorithmic approaches to problem-solving; learn some of the terminology associated with computers and computing.
- Become acquainted with Linux operating system and other software tools.
- Learn the fundamentals of object-oriented programming as expressed in the Java programming language; learn how to design, implement, and debug Java programs.
- Examine some application areas in computer science (graphics, bioinformatics, simulation, robotics, etc.) through programming exercises.

Grading:

This class will have two tests, three quizzes and a number of programming assignments. The tests are closed book, the first test covers material from the beginning of the class and the second test will be cumulative.
These grading categories have the following definitions:

- **Class Participation**: All students are required to actively participate during all of the class sessions. Your participation will take forms of answering questions about the required reading assignments, asking constructive questions, completing class exercises and leading and participating in a discussion session.

- **Laboratory Assignments**: Lab assignments invite students to explore different techniques for designing, implementing, evaluating, and documenting software solutions to challenging problems that often have a connection to real-world concerns. To best ensure that students are ready to develop software in both other classes at Allegheny College and after graduation, students will complete assignments both on an individual basis and in teams.

- **Practical Assignments**: Practical assignments are intended to give students a practice using the new concepts without being afraid to fail. These are short assignments to be completed by the end of the class period, and are graded only as ‘attempted’ or ‘not attempted’.

- **Quizzes**: The three quizzes will cover all of the material in their associated module(s). While the second and third quizzes are not cumulative, they will assume that a student has a basic understanding of the material that was the focus of the previous quizzes. The date for each of the quizzes will be announced at least one week in advance of the scheduled date. Unless prior arrangements are made with the course instructor, all students will be expected to take these quizzes on the scheduled date and complete the quizzes in the stated period of time.

- **Midterm Examination**: The midterm is an hour-long cumulative test covering all of the material from the class, practical, and laboratory sessions. Unless prior arrangements are made with the course instructor, all students will be expected to take this test on the scheduled date. The date for the midterm will be announced at least one week in advance of the scheduled date, tentatively it will be held a few days before the fall break.
• *Final Examination:* The final examination is a cumulative test. By enrolling in this course, students agree that, unless there are extenuating circumstances, they will take the final examination on **Thursday, December 11 at 9am**.

• *Final Project:* This project will present you with an opportunity to design and implement a correct and carefully evaluated solution for a particular problem. Completion of the final project will require you to apply all of the knowledge and skills that you have acquired during the course of the semester to solve a problem. The details for the final project will be given approximately one month before the finals week.

**Assignment Submission:**

All assignments will have a stated due date and are to be turned in electronically on that due date; all assignments must have headers with your name, date and the Honor Code pledge of the student(s) completing the work. You must follow proper procedures for submitting your completed programs in order for them to be graded. You will be given instructions on how to do that with your first programming assignment.

Late assignments will be accepted for up to one week past the assigned due date with a 15% penalty. All of the late assignments must be submitted at the beginning of the session that is scheduled one week after the due date. Unless special arrangements are made with the course instructor, no assignments will be accepted after the late deadline. For any assignment completed in a group, students must also turn in a one-page document that describes each group member’s contribution to the submitted deliverables.

All programming assignments will be graded on Ubuntu 12.04 machine. You are free to work on the programs on whatever machine you choose, but I will test them on the Ubuntu 12.04 machine. The course instructor and the systems administrator do not assist students in configuring their personal computers.

**Attendance:**

It is mandatory for all students to attend all of the class, practical, and laboratory sessions. If you will not be able to attend a session, then please see me at least one week in advance to describe your situation. Students who miss more than five unexcused sessions will have their final grade in the course reduced by one letter grade. Students who miss more than ten sessions will automatically fail the course. Frequent or prolonged absences due to illness should be documented by the student’s doctor, the Health Center, the Dean of Students’ Office, or the office of Student Disability.
Services. If you need to miss class due to a religious observance, please speak to me in advance to make appropriate arrangements.

Class Preparation:
In order to minimize confusion and maximize learning, students must invest time to prepare for the class discussions, lectures, and practical and lab sessions. During the class periods, the course instructor will often pose demanding questions that could require group discussion, the creation of a program or data set, a vote on a thought-provoking issue, or a group presentation. In order to help students remain organized and effectively prepare for classes, the course instructor will maintain a class schedule with reading assignments and presentation slides.

Special Needs and Disability:
Students with disabilities who believe they may need accommodations in this class are encouraged to contact Disability Services at (814) 332-2898. Disability Services is part of the Learning Commons and is located in Peltier Library. Please do this as soon as possible to ensure that approved accommodations are implemented in a timely fashion.

Honor Code:
All students enrolled at Allegheny College are bound by the Honor Code. It is expected that your behaviour will reflect that commitment. To this end, we expect that you will adhere to the following Department Policy:

Department of Computer Science Honor Code Policy
It is recognized that an important part of the learning process in any course, and particularly in computer science, derives from thoughtful discussions with teachers, student assistants, and fellow students. Such dialogue is encouraged. However, it is necessary to distinguish carefully between the student who discusses the principles underlying a problem with others, and the student who produces assignments that are identical to, or merely variations on, someone else’s work. It will therefore be understood that all assignments submitted to faculty of the Department of Computer Science are to be the original work of the student submitting the assignment, and should be signed in accordance with the provisions of the Honor Code. Appropriate action will be taken when assignments give evidence that they were derived from the work of others.

You are encouraged to periodically review the specifics of the Honor Code as stated in the College Catalogue, The Compass, and elsewhere.