Course Syllabus

CS-211: Programming for Engineers I - Fall 2017

Credits /Contact Hours: 4 credits, Two 85 minute lectures and one 85-minute lab per week
Lecture: 5:50pm – 7:15pm (Mon/Wed) at Science Library (SL) 212;
Labs: M/T/W/Th at LNG 103

Webpage: http://www.cs.binghamton.edu/~tbarten1/CS211_Fall_2017/

Teaching Staff: Professor: Tom Bartenstein
Course Assistants: TBD
See web page for contact and office hour details.

Textbook: Programming in C, Fourth Edition, Stephen G. Kochan, Addison Wesley. (There will be no specific reading assignments, but each lecture will identify the associated sections of the text which are relevant to that lecture. Read these sections before the lecture to prepare for the lecture, and/or after the lecture to get a different perspective on the material.)

Course Description: Introduction to computer programming with engineering applications. Programming in the procedural language C, control structures, functions, arrays and pointers. Introduction to abstract data types and object-oriented programming using C++.

Prerequisites: No prerequisites.

Course Objectives: Upon completion of this course students will understand:

- how to write application software.
- how to develop software using C.

Main Topics:

- UNIX / C Development Environment
- How to edit, build, run, and debug a C program
- C syntax, declarations, functions, types, variables
- Assignment statements and operators
- Control statements, loops, and conditions
- Debugging C Programs
- Arrays, Pointers, and Strings
- Structures, Unions, and Typedefs
- More advanced C, bit twiddling, casting, etc.
- Dynamic Memory
- Abstract Data Types
- Object Oriented Programming in C

Lecture Notes: Lecture Notes for each lecture will be posted on the class web-site in PDF format before lectures. *Lecture notes do not substitute for class attendance*, since (i) they will not be complete and (ii) significant parts of lectures, including discussions and in-class exercises, may not come from the class notes.

Grading: Your grade will be based on:

Pop Quizzes, Attendance, Class Participation	15%
Labs	15%
Projects	30%
Tests (2 tests 10% each)	20%
Final Exam	20%

Tests: Tests will be in class, closed notes, and closed book, unless otherwise specified (unlikely). The first test will take place near the beginning of October, the second, near the beginning of November. You must complete the test in the time given. Unexcused absence from the test will result in a zero grade for that test. Test grades will be posted on Blackboard as soon as they are available.

Attendance: Formal attendance will not be taken for each lecture or lab, but attendance is expected. There will be several un-announced quizzes administered throughout the semester during lecture or lab periods. *Unexcused* absence from a quiz will result in a zero grade for that quiz. Quiz grades will be posted on Blackboard as soon as they are available. If you cannot attend a lecture or lab, e-mail the professor *before* the lab or lecture, and consult with the professor or CA afterwards to ensure you know what you missed.

Homework: Short homework assignments will be posted on the class web page approximately a week before homework is due. The assignments should take less than an hour, and will serve as good practice for the tests and exam. Homework will not be turned in or graded for this class unless informed otherwise (for instance, if nobody does the homework and all the test grades are bad.). On the due date, the answers will be reviewed in class and posted on the web.

Labs: Lab instructions will be posted on the class web page prior to the start of the first lab section. Either the CA or the Professor will be available to answer questions during the lab period. You are encouraged to work together during labs, but may work on your own. If you work as a team, make sure that every member of the team understands the lab material! Material covered in the labs will appear on quizzes, tests, and the final exam. A link to a short list of questions will appear at the end of the lab. If you have completed the lab these questions should not take more than 15 minutes to answer. Please submit those answers on the MyCourses main course page, due by 12:00 Midnight of the Friday following the lab. Lab write-ups will not be accepted after that time. Lab grades will be posted on Blackboard once they are available. Note – we will not be using the MyCourses Lab Section page this semester.

Projects: There will be four long-term programming projects assigned throughout the semester. *The lowest project grade will be dropped*, and the remaining three will be averaged. The instructions for each project will be posted on the class web page. Each project will require a significant time to complete, so get started on projects early – if you wait until a week before the project is due, you will not get a good grade! Project solutions are expected to run on the POD UNIX accounts, so please test them there. Project solutions will be on MyCourses. Late projects will result in a 10% deduction for every day the submission is late. More specific submission and grading instructions will be included in the project instructions.

Partial Credit: In this course, we commonly give partial credit to partially correct answers. For that reason, it is always recommended to show your work in developing a solution for homework, test questions, lab questions, and projects.

Getting Help: Please utilize the instructors and CA's office hours for questions and discussion of course related material. Our job is to make you successful, and office hours are a great way to get help. E-mail the instructor or CA's if you need an appointment outside of office hours, or e-mail questions or discussions to the professor directly.

Academic Honesty Expectations: Please review the academic honesty document and make sure that you understand it! The link is at: http://www.binghamton.edu/watson/about/honesty-policy.pdf. Cheating and copying will NOT be tolerated. For instance, any code turned in will be compared to other students' submissions. If there is significant similarity, even if there are different variable names or comments, all such similar code will receive a zero grade.

Collaboration: Students are encouraged to help one another and to form study groups. In Computer Science, you can learn more from your peers than from your instructors and teaching assistants. As long as the help is appropriate, please be generous with your time and expertise when helping fellow students. Doing so is good for you and good for them. You are free to discuss assignments *in general terms* with one another. However, please do not show your work directly to other students. Each student must complete your assignments *individually* (unless indicated otherwise by the instructor). Each of you must write your own code, and you must write up all solutions individually. Students submitting solutions (including code) that are determined to be "too similar" are likely to be punished equally and harshly. We can tell whether you have done the work on your own, so please do the work on your own.

Academic Stress: If you are experiencing undue personal or academic stress at any time during the semester or need to talk with someone about a personal problem or situation, I encourage you to seek support as soon as possible. I am available to talk with you about stresses related to your work in my class. Additionally, I can assist you in reaching out to any one of a wide range of campus resources, including:

1. Dean of Students Office: 607-777-2804
2. Decker Student Health Services Center: 607-777-2221
3. University Police: On campus emergency, 911
4. University Counseling Center: 607-777-2772
5. Interpersonal Violence Prevention: 607-777-3062
6. Harpur Advising: 607-777-6305
7. Office of International Student & Scholar Services:607-777-2510