CMSC 240: SOFTWARE SYSTEMS DEVELOPMENT FALL 2017

Lecture: M 13:30–14:45, Jepson G20
Lab: W 13:30–14:20, Jepson G20

Office Hours: T 14:00–15:00, W 15:30–16:30, or by appointment

Instructor: Barry Lawson
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Web Page: http://www.mathcs.richmond.edu/~blawson/cmsc240/

Texts:
The following texts are available via the UR Library's Safari Books Online subscription — you may access them via links on the course Web page.

- A Tour of C++, B. Stroustrup
- The C++ Programming Language (4th ed.), B. Stroustrup
- Head First Object-Oriented Analysis and Design, B. McLaughlin, G. Pollice and D. West.
- The Art of Debugging with GDB and DDD, Matloff and Salzman. (suggested reading)

Other texts are available free of charge via Safari Books Online through the library's online search. I encourage you to explore and find books and learning resources that work well for you.

Course Description:
In CMSC 150 and 221, you have developed a solid set of programming skills and a good background in the Java programming language. As you continue with your CS major or minor, you will encounter problems that are larger in scale than the typical programs you have written, and that may have requirements that are not so easily met in the Java language. In this course, you will enhance your skill set by learning the C++ programming language (useful in CMSC 301 and several other upper level courses as well as for many real-world problems) and get an introduction to a number of tools and strategies that will prove useful as you tackle larger and more complex problems. We will talk about design strategies and object-oriented techniques that ease the construction of larger scale programs, and you will reinforce your skills in systematic testing and debugging of software. In the latter half of the semester, you will work in a group on a sizeable project, going from design through implementation. The course is focused on developing useful, professional-quality software, a worthwhile goal whether you eventually write software for a living or use programming as a tool in pursuit of some other goal.

Assignments: This course is “about doing”. Accordingly, the assignments will consist of weekly lab/homework assignments, weekly quizzes, a few individual programming projects, and one substantial group programming project.

Web Page and Email: I will use the course Web page and email for assignment-related information. It is your responsibility to check both frequently.

http://www.mathcs.richmond.edu/~blawson/cmsc240/

Grading Policy: Final letter grades will be assigned per the traditional 10-point scale (≥ 90% is at least an A–; < 90% but ≥ 80% is at least a B–; etc.), according to the following percentages:

- Quizzes, Lab & Homework Assignments 40 %
- Individual programming assignments 30 %
- Group programming assignment 30 %

Attendance Policy:

- You are expected to attend each class period and each lab session for its duration. If you must miss a class or lab, you are responsible for any associated material. If there is a class or lab that you must miss, please inform me in advance.
- Any student with an excessive number of absences is subject to a failing grade of V.
Honor Code:

- Unless provided to you by the instructor of this course, you are not permitted to view or use in any way existing assignments, tests, or solutions in any form, whether they be from a previous offering of this or another course or Internet-available.
- Lab assignments and homework assignments may be discussed with others, but are subject to the empty hands policy:
  
  You may freely discuss ideas with other students, but each student must leave the discussion without any written or otherwise recorded material.

  You may not work directly with any other student on the completion of individual programming assignments. Any manifestation of copying another student's work for your own (whether digital, hand-written, oral, etc.) or working together on an assignment is not permitted — this includes, for example, looking at another student's implementation and then writing "your own" version of that implementation.
- Failure to comply with these policies will be treated as an Honor Code violation.

Special Notes:

If you are allowed academic accommodations, or if your desire to observe a religious holiday presents a conflict with class activities, please contact me as soon as possible.

Course Outline: Following is a basic list of topics to be covered this semester, not necessarily in the order presented below. Additional topics may be added as necessary.

- C++ language introduction
- Generic programming
- Working with standard libraries
- Systematic testing and debugging
- Software design concepts
- Object-oriented design
- Software development tools
- Group project

Important Dates:

At this point, I do not intend to have tests or a final exam in this course, focusing instead on the project work. I reserve the right to modify this decision. (To borrow a quote from Darth Vader, “I am altering the deal. Pray I don't alter it any further.”)

Fall Break: Mon 16 Oct – Tue 17 Oct
Thanksgiving Break: Wed 22 Nov – Fri 24 Nov