CS 201: Problem Solving & Programming II
Summer 2013

Last updated 2013-05-17

Class Webpage: https://github.com/Moosader/Problem-Solving-and-Programming-II

The Class

CS201R
Class Time: Tuesday/Thursdays 1:00 pm – 3:45 pm
Building: Flarsheim 302
Office Hours: TBD

The Instructor

Rachel J. Morris, Adjunct Instructor

Email is preferred means of communication: rjmfff@umkc.edu

My interests: programming, game, web, and software development, best practices, open source, math, education, video games, piano, drawing, and spoken languages.

The Textbook

Textbook: Absolute C++ 5th Edition by Walter Savitch

The Tools

- In this class, we will be using the C++ programming language. It is up to you what IDE to use (Visual Studio, Code::Blocks, etc. we will go over it in-class).
- We will also be using GitHub (& the GitHub for Windows client) to store assignments; you will not be turning them in via Blackboard.
- I write my documents in this class with LibreOffice, so you need something that opens .odt files. MS Office, OpenOffice, and LibreOffice will work.

Course Description

Problem solving and programming using classes and objects. Algorithm efficiency, abstract data types, searching and sorting, templates, pointers, linked lists, stacks and queues implemented in C++. Prerequisites: COMP-SCI 101, COMP-SCI 191. (Must be passed with a C or higher). Concurrent enrollment in Comp-Sci 201L required.

Objectives

- Object oriented design & implementation with classes and functions.
- Utilize pointers & references for dynamic arrays, passing data by reference, and polymorphism.

- Design & implement a recursive solution.
- Create common data-structures, such as linked lists, stacks, & queues.
- Write reusable generic code using templates.
- Analyze function efficiency with big-O notation.

Preparation & Organization

I know it's hard to start on an assignment the day-of, but starting early will help a lot. At the very least, write down a “to-do list” the day an assignment is assigned in class and get some momentum built.

Organization is important in college and elseware! If you don't already, utilize **Google Calendar** or similar services online to store assignments & events (and have it text/email you when something is coming up!)

Other organization tools are **Trello.com** for project management and **Evernote.com** for general life organization.

Question Policy

Feel free to ask questions any time. I don't care if it's week-8 of the class and you have a question from week-1. The exact date you learn a concept isn't important to me, it's making sure that you have a solid foundation.

I know what it's like to not understand something, but never get around to asking, and then not wanting others to realize you're behind. Don't let that stop you!

Also, email or IM is my preferred means of communication: rjmfff@umkc.edu

When emailing, please put “CS201” somewhere in the subject for the most immediate response.

Grading

Your grade will be based on your weekly programming assignments, weekly quizzes, a midterm exam and final exam.

Exams:	100 points each	2 Exams
Assignments:	80 points each	8 Assignments
Quizzes:	10 points each	8 Quizzes
Extra Credit:	5 points each	8 Extra Credit assignments

I'm not putting exact percentages on these because we might have to drop a quiz or assignment due to time. Your score is the sum of points divided by total points available.

The Assignments

Assigned: Thursday Due: Following Thursday

There will be weekly assignments in this class. They're due on a Thursday so you have a weekend plus one class period to work on the assignment and figure out if you need help. Don't

start assignments the day of!

Late Work

Late work will not be accepted. If you're running behind and the program is due, get something up and running with working functionality and turn that in for partial credit.

Pretty Programs

You don't need to heavily comment your programs so long as your work is "self-documented code"; this means that you have very clearly named variables, functions, classes, etc. It might help to start by writing comments to segment your program into steps, however, and keep you organized/focused. (You won't get docked for having too many comments, and if your program is easy to read & follow the flow you won't get docked for too few comments).

Programs in the real world don't shove all of the program logic in **main()**. Please try to design your programs to utilize classes and functions to keep your programs **modular**.

Your Work

Assignments are individual-effort. You can brainstorm with other students and help them work through problems in their programs (help them think through it – don't just give them the "correct" code), but everyone should have their own unique assignment programs.

Quizzes

Homework is handed out on Tuesdays. On Thursdays at the beginning of class, we will have a short quiz, and the questions will come straight off the homework. You do not need to turn in the homework.

Academic Honesty

It should be pretty obvious what cheating, plagiarism, and sabotage entails, but if you need clarification on if something isn't allowed, please ask.

UMKC Resources

You can view the student handbook at
http://www.umkc.edu/stu-aff/student-handbook-home.asp