ECE 551 Programming, Data Structures, and Algorithms in C++
Fall 2017
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Textbook

Required. All of Programming. Hilton and Bracy. Edition 0.
Note that AoP is short for "All of Programming."
Chapter 1–30, 34 and appendices A (Ch 35), B (Ch 36), and C (Ch 37) are required reading.
Chapters 31, 32, and 33 as well as appendix D (Ch 38) are recommended optional reading.

The book's website is `http://aop.cs.cornell.edu`, which includes a link to the Google Play download for the book.

Class Format

This course will use the "flipped classroom" model for most of the semester. In this model, your homework will to read and watch the videos in the assigned chapter(s) of AoP. Class time will be primarily spent working problems and practicing programming. If you do not complete in-class exercises during class time, you will need to catch up out of class.

This course also has a recitation section (Fridays), which will primarily cover relevant skills (Linux, Make, etc) as well as provide opportunities to review and practice the material.

Assignments and Grading

Your grade for this course will be comprised of four components:

- Formative Assignments: 10%

- Evaluative Assignments: 40%

    - Assignment 29: 5%
    - Assignment 43: 8%
    - Assignment 60: 12%
    - Miniproject: 15%

- Midterm Exam: 20%

- Final Exam: 30%

Final letter grades are assigned based on the following scale (with slight modification as described below):

A-range	>97 A+	91–97 A	90–91 A-
B-range	87–90 B+	81–87 B	80–81 B-
C-range	77–80 C+	71–77 C	70–71 C-
F	<70 F		

Before assigning letter grades, I *may* alter the scale by lowering the threshold for a certain grade (e.g., making a B- span 79.5–81 instead of 80–81). Such a change is **solely at my discretion**, and occurs when the change results in a letter grade more accurately reflecting the quality of the students work and effort.

Formative Assignments

Class time will be dedicated to in-class formative programming exercises. The expectation is that you will attend class regularly and complete these exercises in the classroom. During these exercises, I will answer questions that may arise, or help you get unstuck as needed. I will generally move around and answer individual questions, but may interrupt everyone to answer a commonly occurring question or clear up a common misconception.

While I expect you to generally finish these activities in class, I recognize that sometimes you must be absent for legitimate reasons, and that sometimes programming tasks take longer than expected. Each assignment will be considered late at 17:00 (5:00 PM) 2 days after it is given. Once an assignment is late, you will begin to lose points on your grade. In particular, your grade is the product of correctness (C) and timeliness (T): $G = C * T$. Where timeliness is computed with as a logistic function of the number of hours (H) that your assignment is late: $T = \frac{1}{1+e^{0.05*(H-96)}}$. Note that this means that 1 day = 0.973, 2 days = 0.917, 3 days = 0.769, 4 days = 0.5, 5 days = 0.231, etc.

Evaluative Assignments

You will have four evaluative assignments. Three of them (29, 43, and 60) will be relatively small scale. During the last few weeks of class (11/10/2016–12/03/2016) you will work on a larger programming project instead of smaller classworks.

All of these evaluative assignments are **individual effort**. You may not consult your friends, use code from other sources, etc. They are effectively like exams. You may use AoP, the Linux man pages (or library reference on cplusplus.com for the miniproject), and your course notebook. For a few of them, you may have limited other resources you can use. If other resources are permissible, they will be described in the honor statement accompanying the assignment.

These assignments will be **checked for cheating**. If you are caught cheating, you will receive a 0 on the assignment, and be referred to the appropriate Associate Dean.

Exams

You will have one mid-term exam (during recitation on Friday October 6th), and one final exam (during the scheduled final exam time slot). These exams will be individual effort, however, you may use your course notebook during them. Your course notebook must be a paper notebook, containing **only material handwritten by you.**

The midterm exam will cover the material presented in Chapter 1–13, and Appendices A, B, and C of AoP. The final exam will cover all material in the course.

Academic Integrity

Academic integrity is very important, and misconduct will not be tolerated in this course. All students should already be aware of a few basic principles which govern academic integrity at Duke in general:

- I will not lie, cheat , or steal in my academic endeavors, nor will I accept the actions of those who do.

- I will conduct myself responsibly and honorably in all my activities as a Duke student.

If I suspect academic misconduct in my class, I will report you to the appropriate Associate Dean, who will carry out the required due process to determine if you committed academic misconduct. If you are found responsible for academic misconduct, I will give you a 0 on the corresponding assignment. The Associate Dean overseeing your case is likely to impose additional sanctions against you.

Some concrete expectations for how you will perform your work in my class:

Formative Assignments

Please feel free to work with your classmates on the **formative** exercises in this course. They are for you to learn, and we encourage you to do whatever it takes to learn the material. We note that looking at someone else's solution (or watching them solve the problem) is a poor way to learn the material, and thus discourage it.

Evaluative Assignments

Your evaluative assignments (29, 43, 60, and the miniproject) will be done individually.

You may generally use: your course notebook, AoP, and the man pages (or cplusplus.com's library reference for the miniproject). You may refer to *your own* prior coursework assignments. Limited other resources may be permissible on specific assignments, as spelled out in that assignment's honor statement.

You may never: consult with another student about the assignment, see another student's code, show another student your code, use code from another course, nor use code from the internet.

If you have performed a similar assignment in another course, you must discuss that assignment with the professor before doing the assignment in this course.

Exams

Exams are expected to be entirely individual effort. You may use your course notebook only. You must keep your eyes on your own paper.

Lying

Lying to any University official (including faculty) is a serious offense under any circumstances. Lying during the course of an official investigation is particularly serious. If you are suspected of academic misconduct, and lie to anyone conducting the investigation, you will face additional charges.

Other

If you are unsure if something is OK, please ask me. If you do not want to ask me because you think I will probably say "no," that is a good indicator that it is not acceptable.

If you do something wrong and regret it, please come forward. I recognize the value and learning benefit of admitting your mistakes. You should not take this to mean that coming forward of your own volition will absolve you of all consequences, just that it can be taken into account in reducing the sanctions.

If you are aware of someone else's misconduct, please report it to me or another appropriate authority.