

## ECE 118 sections R and RC, Autumn 2018.

### Book

"C++ programming: program design including data structures"  
by D. S. Malik, Course Technology inc., ISBN 1418836400.

### Instructor

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### Bulletin Description

Introduction to computing, problem solving, program design, C++ language fundamentals, and software engineering principles. Software design projects are included.

### Specific outcomes of instruction: The student will:

1. Understand the fundamental concepts of computer systems.
2. Know and understand the fundamentals of programming, algorithms, data, and software engineering.
3. Be able to program in C++.
4. Have hands-on experience in problem solving and software design.

### Topics

1. Graphical programming in a windowing environment
2. Text-mode programming in a unix environment
3. C++: Functions, constants, local declarations, recursive design
4. C++: Strings, arrays, objects
5. C++: Variables and loops
6. C++: Input and output - graphical, iostreams, files
7. Structured design: blocks, locality, pure functions
8. Modular design: abstraction, independence
9. Data visualization, interactive graphics
10. Simulation and modelling
11. Searching and sorting, managing data collections
12. Algorithms and specifications
13. Timing: function and algorithm speed estimation and analysis
14. Data representation, types, declarations, scope

### Attendance

- You are adults and responsible for your own lives, I would like to be informed of any absences, and you must make up for anything you missed, and I'm not going to go over a whole class for someone who overslept or just didn't turn up. Missing a class is not an excuse for being late with an assignment.

- EXCEPT, attendance in the lab sections is absolutely required, and attendance is taken. I must be informed of any excused absences, and the missed session must be made up without delay. This strict policy is required by the nature of 118 labs.

### Late Assignments

- Apart from the ECE118 lab assignments, rare instances of lateness will be overlooked. Good excuses will always be considered. One of the hallmarks of a good excuse is that you didn't only think of it after the deadline passed. If you've got a reason for being late, tell me it before you actually are late.
- But some assignments are discussed and analysed in class. This may happen at any time after the due date, and after we have been over an assignment in class, it is possible that turning it in will not gain any credit.

### Mid-Term Examinations

- There will be two mid-term examinations, one near the middle of the semester, and one nearing the end. Dates will be announced.

### Final Examinations

- Our final is on Tuesday 11<sup>th</sup> December at 5:00 pm. Make sure you know when your exam dates are, and don't accidentally book a flight home earlier. Final exam period is exceptionally busy, and it is not possible to offer pre-makeups.

### Books

- You are not *required* to get the textbook, but one is strongly recommended.
- You certainly do not need the most up-to-date edition. Slightly older editions, used but in good condition, can be bought quite cheaply on line.

### Collusion

- Studying in groups is very beneficial, and is strongly encouraged.
- All assignments and projects are strictly individual effort unless explicitly stated otherwise.
- Do not confuse those two points. With any programming assignments, once you get to making a detailed design, and well before you do any coding, it is time to stop working in a group. If a program starts off similar to someone else's, it is just about impossible to make it individual again, and that really shows up strongly in grading. No credit will be given for work you didn't do yourself.

### Holidays

- In short, tell me by email during the first week of classes, of any religious holidays that would prevent you from participating in some class event (particularly a mid-term), and I will make every effort to accommodate you.