

CPSC 200—Data Structures and Algorithm Analysis, Fall/97

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Prerequisites: CPSC 101 and CPSC 141, or permission of instructor.

Syllabus: Most of the material will be from *Weiss*, in particular Chapters 2–4 and 7, with other material as time permits. Topics include:

- 1 week • Templates and a discussion of coding container classes in C++.
- 3 weeks • Algorithm analysis and asymptotic complexity.
 - Error handling and exceptions.
- 2 weeks • List classes and iterator classes.
- 1 week • List based classes: stacks, queues, and deques.
- 2 weeks • Sorting algorithms.
- 3 weeks • Tree classes.

Times are approximate. The remainder of the semestre will be spent exploring applications of the above data structures.

Grading Scheme:

Homework:	20%	
Midterm Tests:	40%	08-Oct, 17-Nov
Quizes:	up to 10%	
Final Exam:	30%–40%	3h in 08–16 Dec

I reserve the right to change the weight of any portion of this marking scheme. If changes are made, your grade will be calculated using the original weighting and the new weighting, and you will be given the higher of the two.

Lecture times: M W F 16:30–17:20. **Room** 7-158. There are *no* assigned lab or tutorial times.

Text Book: *Data Structures and Algorithm Analysis*, by Mark Allen Weiss.

References: *C++ How to Program*, by Deitel and Deitel.

The C++ Programming Language, by Bjarne Stroustrup.

On to C++ by Patrick Henry Winston. An excellently written small book for students who are uncomfortable with C++ or object-oriented programming. Not necessary for students who have taken CPSC 101 at UNBC.

The Art of Computer Programming by Donald E. Knuth. Difficult reading, but these three volumes contain a wealth of information on list data-structures, algorithmic analysis and sorting algorithms.