Exam information

Rules

- Open book, open note, open IDE - you can use your textbook, notes, and Visual Studio during this exam. (Definitely bring your book!)
- You can use paper to sketch out answers to problems.
- No surfing the internet.
- No communicating with other humans.

Topics

- Data Structures
- Linked Lists
- Exception Handling
- Algorithm Efficiency
- Stacks
- Trees
- Searching & Sorting
- Queues
- Dictionaries

Format

59 computer-graded questions (multiple choice, matching, etc.)

2 coding questions

Things to know

C++ Basics	Classes and objects, memory management, etc.
Chapter 1	Terminology: Coupling, cohesion, encapsulation, data-hiding, abstraction, ADT
Linked Structures Chapter 4	How linked lists and their nodes work, how they're implemented. How to code a linked list.
Stacks Chapter 6	How stacks work, their functions. How to code a stack.
Exception Handling Interlude 3	Types of errors, how try/catch/throw works, best practices, terminology. How to code try/catches.
Queues Chapter 13, 14	How queues work, their functions. How to code a queue.

Algorithm Efficiency Chapter 10	Knowing the average Big-O values for common functions, including searching, inserting, and access functions for arrays, stacks, queues, hash tables, binary search trees. Being able to find Big-O efficiency for simple functions.
Searching and Sorting Chapter 11	Types of sorting algorithms (basic attributes) By-hand stepping through selection sort
Trees Chapter 15, 16	Terminology, how core functions work, how to code a binary tree's recursive functions.
Heaps Chapter 17	Terminology
Dictionaries Chapter 18	Types of collision strategies, how they work.