



## Midterm Exam 1 Topics

In general, you are responsible for the material from the first four chapters that was covered in class. You are not responsible for material from the first four chapters that was skipped. The rule to follow is this: The exam will cover nothing but the material covered in the lecture notes that I wrote and posted on the course website. If the lecture notes refer to material from the book, then that material may also be tested on the exam. Following is a breakdown of the major topic areas that may be tested.

### Software Engineering Concepts Principles and Practices:

- The Software life cycle,
- Object-oriented problem solving
- Abstraction and information hiding: data abstraction, functional abstraction
- Abstract data types
- Principles of object-oriented programming
- Object-oriented analysis and design
- Software quality

### Recursion

- Reading and writing recursive functions
- Reading and writing recursive definitions
- Binary search
- Towers of Hanoi
- Grammars and Languages
- Pre- and postfix expressions
- Backtracking algorithms
- The Eight Queens Problem

### Data Abstraction

- The list ADT
- The sorted list ADT
- C++ Review: default parameters, initializer lists, constructors

### Constructors, Copy Constructors, and Destructors

- Constructors
- Copy constructors
- Destructors