Midterm Exam 1 Topics

In general, you are responsible for the material that was covered in class starting with the first class and ending with the next-to-last class before the exam, which in this case is the class on September 26. The rule to follow is this: The exam will cover all material covered in the lecture notes that I posted on the course website through Recursion II. If the lecture notes refer to material from the book, then that material may also be tested on the exam. The topics will also include topics covered in class for which tutorials exist on my website, such as separate compilation and using the command line g++ compiler. 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

- The compilation process: roles played by preprocessor, compiler, linker, etc.

- Separate compilation and building of multi-file programs

Recursion

- Reading and writing recursive functions

- Reading and writing recursive definitions

- Binary search

- Towers of Hanoi

- Grammars and Languages

- Pre- and postfix expressions

- Backtracking

- The Eight Queens Problem

Data Abstraction

- The list ADT

- The sorted list ADT

- C++ Review: default parameters, initializer lists, constructors

- Class interfaces and their description in general

Constructors, Copy Constructors, and Destructors

- Constructors

- Copy constructors

- Destructors