

CS362 (Data Structures) Challenge Exam Preparation Notes

Textbook (available in the Regis bookstore):

Malik, D.S. (2004). *C++ Programming: From Problem Analysis to Program Design* (2nd ed). Course Technology/Thompson Learning; ISBN: 0-619-16042-X.

The CS362 exam consists of 2 parts.

The first part is a written exam. You will have 3 hours to complete the written exam.

The second part is a take-home programming exam. You will have 3 weeks to complete the programs. Your programs should be coded using an ANSI C++ compiler (Dev-C++ is recommended) in CONSOLE mode (WITHOUT using any object-oriented features).

The Dev-C++ compiler may be downloaded free from:

<http://www.bloodshed.net/dev/devcpp.html>

You must design and write the program code and return it to the testing office in the allotted time. You may be required to turn in any or all of the following as part of the take-home exam:

- 1) Source code (both a hardcopy, and on diskette or CD)
- 2) Executable code
- 3) Structure charts
- 4) Test Plans

The CS362 exam may cover any of the following Data Structures topics:

- Design, implementation, testing, and debugging a program that uses:
 - Text data files and file stream variables
 - string and enumerated data types
 - One-dimensional, parallel, and multi-dimensional Arrays
 - List sorting
 - Ordered and un-ordered list searching
 - Declaration and usage of Arrays of Structures
 - Creation and usage of Binary files
 - Declaration and usage of dynamic data variables (pointers)
 - Pointer implementation of linked lists
 - Stacks and/or Queues.
- Structure charting, flowcharting, and using a high-level programming language to implement algorithms and solutions to problems
- Use of structured (functional) decomposition to break a program into smaller pieces
- Identification of the deficiencies in the design and implementation of a program
- Program testing

More detail about coverage of each of these topics can be found online in the Module for this course at: **<http://www.regis.edu/regis.asp?sctn=apg&p1=ua&p2=cs&p3=mod>**