CS 2308: Foundations of Computer Science II
Fall 2012

Section 001
Section 003

Instructor: Dr. Jill Seaman
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Course Webpage: http://www.cs.txstate.edu/~js236/cs2308

Office Hours: MW: 9:30AM – 10:30AM
TR: 1:30PM – 3:00PM
and by appointment.
Subject to change (if so you will be notified).

Meeting Time/Place: Section 001: MW 3:30PM-4:50PM DERR 240
                      Section 003: TR 11:00AM-12:20PM DERR 235

Open Labs: DERR 231: Linux Lab
           MCS 590: Windows Lab
           MCS 594: Lab tutors

Text: Tony Gaddis, Starting out with C++: From Control Structures through Objects,

List of recommended/required readings:
    Chapters 1-7 (review of CS 1428)  (recommended)
    Chapters 8,9,10,11,13,14,17,18  (required)

Prerequisites: CS 1428

Course Description: Fundamentals of object-oriented programming. Introduction to
abstract data types (ADTs) including lists, stacks, and queues. Searching and
sorting. Pointers and dynamic memory allocation. A continuation of CS 1428.

Course Objectives:
1. Develop and use appropriate algorithms.
2. Know that there are typically many algorithms for the same task (for example,
   searching and sorting).
3. Implement a divide-and-conquer algorithm to solve an appropriate problem (binary
   search).
4. Have an introductory knowledge of the time/space efficiency of various algorithms.
5. Understand structured programming in terms of modules and functions.
6. Understand how to separate source code into multiple files, including header (.h) files.
7. Use pointer variables and memory operations.
8. Resize an array with dynamic memory allocation.
9. Delete allocated memory to avoid memory leaks.
10. Create and use simple linked-lists.
11. Insert into, delete from, and traverse a linked structure.
12. Understand the principle of the Abstract Data Type (ADT) and, in particular, the separation of interface and implementation.
13. Implement user-defined data structures in a high-level language.
14. Compare and contrast the costs and benefits of dynamic and static data structure implementations.
15. Have an introductory understanding of object-oriented programming.
16. Write a program using an array of objects.
17. Design, implement, test, and debug simple programs in an object-oriented programming language.
18. Describe how the class mechanism supports encapsulation and information hiding.
19. Write programs that use each of the following data structures: arrays, structures, strings, and linked lists.
20. Describe and understand concepts of Stacks and Queues.
21. Be able to create, compile, and run a program in a Unix style, command-line environment.

Grading:

- **Attendance:** required
- **Quizzes:** 5% 6-8 total
- **Programming Assignments:** 25% 7-8 total
- **Exam I:** 20% Oct 3 (W) and Oct 4 (Th)
- **Exam II:** 20% Nov 12 (M) and Nov 13 (T)
- **Final Exam (comprehensive):** 30% See below

**Final Exam Dates:**

- Section 001 (MW): Fri, Dec 14, 2:00PM to 4:30PM
- Section 003 (TH): Tues, Dec 11, 11:00AM to 1:30PM

**Attendance:** I record attendance every day and I expect you to be in class every day. Attendance may be used as “extra credit” towards your grade, but it is NOT optional.

**Quizzes:** Quizzes are usually announced during the previous class and will count for 5 points each.

**Makeup Policy:** Missed quizzes and attendance cannot be made up. Programming assignments cannot be made up. Exams may be made up in exceptional circumstances, with documentation and/or approval from the instructor.

**Late policy for programming assignments:** see the class webpage.

**TRACS:** Your grades will be posted on TRACS. Everything else, including programming assignments and lecture presentations, will be on the class webpage.
Withdrawals/drops: You must follow the withdrawal and drop policy set up by the University and the College of Science. You are responsible for making sure that the drop process is complete.  
http://www.registrar.txstate.edu/registration/drop-a-class.html

Last day to drop: October 25, 2012.

Notifications from the instructor: Notifications related to this class will be sent to your Texas State e-mail account. Be sure to check it regularly.

Classroom Behavior: The main rule is to not disrupt or distract other students during class. Please do not arrive late or leave early (without prior permission from the instructor). Cell phones, iPods, etc. should be kept out of sight and turned off or on vibrate during lecture.

Academic Honesty: You are expected to adhere to the University's Academic Honor Code as described in http://www.txstate.edu/effective/upps/upps-07-10-01.html. Also see the Texas State Student Handbook. Unless otherwise stated, all assignments are to be done individually. You may discuss general strategies for attacking assignment problems with other students in the class but you must write your own code. Your submitted programs may be run through an internet service designed for detecting plagiarism in software code.

Accommodations for students with disability: Any student with a special needs requiring special accommodations should inform me during the first two weeks of classes. The student should also contact the office of disability services at the LBJ student center.