CS 3358 - Data Structures
Fall 2015
(Section 004)

Instructor: Dr. Vangelis Metsis
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Office Hours: TuTh 10:00am – 11:00am & 3:30pm – 5:00pm

Section Information: CS3358-004
Time and Place of Class Meetings: TuTh 2:00pm - 3:20pm, DERR 240

Public course webpage: http://cs.txstate.edu/~v_m137/cs3358_fall2015
- Course schedule and assignments will be posted here.

TRACS URL: https://tracs.txstate.edu/

We will use the TRACS website for the following:
- Grades (Gradebook2 tool)
- Programming assignment submissions (Assignments tool)
- Lecture notes and Resources (code you can use in your programing assignments)
- Announcements
- The course schedule and assignments will also be posted on the class webpage.

Prerequisites:
C or higher in CS 2308: Foundations of Computer Science II
C or higher in MATH 2358: Discrete Mathematics I

Description of Course Content:
A course covering classic data structures and analysis of elementary algorithms, with an introduction to recursion.

Course objectives:
1. Understanding Abstract Data Types: motivations and basic concepts.
2. Understanding of the behavior of basic data structures (lists, stacks, queues, trees (binary trees and tree traversals, height- balanced trees), graphs, hash tables).
3. Ability to analyze a problem and determine the appropriate data structure for the problem.
4. Understand the importance of data modeling and data structures in advanced programming.
5. Understand and analyze elementary algorithms: sorting, searching and hashing.
6. Ability to analyze the impact of data structures technique on the performance of algorithms (time and space complexity)/programs.
7. Deep understanding of recursion and its applications.
8. Data structure implementation issues. Understanding of dynamic versus array implementations of data structures, factors involved in deciding on an implementation technique.
9. Practice in writing modular programs using the data structures that have been studied.
10. Understanding the mechanics of code design, organization, and the development environment.
11. Understanding data structure implementation in C++ using header files and implementation files.

Course Materials:
- Class notes and source code provided by the instructor.

Required Textbook:
- Data Structures and Other Objects Using C++, 4th Edition, Michael Main and Walter Savitch, ISBN:

0-13-212948-5

Grading:
Class attendance and participation (including quizzes): **5%**
Programming Assignments: **25%**
Midterm Exam 1: **20%** (Tuesday, 9/29)
Midterm Exam 2: **20%** (~~Tuesday, 11/3~~ Thursday, 11/5)
Final Exam (comprehensive): **30%** (Tuesday, 12/8, 2:00 - 4:30 pm)

Class Attending Policy and Homework Policy:
Must attend class and submit homework on time. Excessive absences may influence your final grade.
All assignments are to be done individually! You may discuss general strategies for solving assignment problems with other students in the class and you may help each other debug, but you must write your own code.
Late assignments will incur 10% penalty per day, for up to 3 days. After the 3 days, no submission will be accepted.

Make-up Exams:
Make up exams will be allowed only to students that were not able to take the original exam due to a health condition justified by the related paperwork from a doctor. Absence due to other reasons will be graded with zero. There will be no make- up quizzes.

Drop Policy:
You must follow the withdrawal and drop policy set up by the University and the College of Science. You are responsible for checking the drop deadlines and making sure that the drop process is complete.
http://www.registrar.txstate.edu/registration/drop-a-class.html
***Students will not be automatically dropped for non-attendance**.
***Last day to drop: October 25, 2015.**

Accommodations for students with disability:
Any student with a special need 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.

Academic Honesty:
You are expected to adhere to both the University's Academic Honor Code as described here: http://www.txstate.edu/effective/upps/upps-07-10-01.html, as well as the Computer Science Department Honor Code, described here: 2013 0426 HonestyPolicy CSPPS.doc.

- Except where explicitly and specially allowed (such as group project), all work submitted in the class is expected to be your individual work. Plagiarism will not be tolerated and if detected will result in automatic "F" grade.
- Do not include code (or other materials) obtained from the Internet in your assignments (except what is provided or allowed by the instructor).
- Do not email your program to anyone (except your partner or the instructor).
- The penalty for submitting a program that has been derived from the internet or any other non-approved source will be a 0 for that assignment. Violators will be reported to the Texas State Honor Code Council (http://www.txstate.edu/honorcodecouncil/).