Texas A&M University – Corpus Christi  
COSC 2437 and COSC 5321: Data Structures  
Spring 2013 ~ Section 001/201

Instructor: Burak Ersoy  
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Office Hours: M 4pm-5pm, T 1pm-3pm, R 8:30am-10:30am  
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Course Information: COSC 2437.001 MW 2:00-3:15pm CI 127  
COSC 2437.201 W 3:30-5:20pm CI 226

Course Website: http://sci.tamucc.edu/~iersoy/ and Blackboard  
(Let me know if you ever have trouble accessing the course materials)

Course Description:

This course provides a thorough study of standard structures used in the storing and retrieving of data and the process by which these structures are created and manipulated. Topics include: abstract data types, lists, trees, hashing, stacks, queues, sorting, searching, and recursion.

Prerequisites:
COSC 1436 and MATH 2305.

Student Learning Outcomes:
Upon successful completion of this course, the student will:
- Understand and use searching and sorting algorithms.
- Understand the concept of algorithm efficiency and be able to determine the Big-O efficiency of an algorithm.
- Understand the concept of object-oriented programming through the use of abstract data types.
- Understand and use dynamic memory allocation to create list, stack, and queue data structures.
- Understand and use dynamic memory allocation to create tree data structures.
- Be able to analyze and select appropriate data structures to implement a solution to a problem.
- Understand and use recursion to solve a problem.
- Understand the basic concepts of graph data structures and some of the algorithms associated with graphs.

Required Course Texts and Materials:
- Some way to archive your programs (flash drive, Dropbox/Cloud, etc)

Recommended or Supplemental Reading:

Student Evaluation:
- Exams (50%) – There will be two in-class exams worth 15% of the final grade each, as well as a comprehensive final exam worth 20% of the final grade. Please note the dates of the exams on the course schedule below and plan accordingly. Exams may only be made up with an approved University
Programming Assignments/Labs (30%) - As part of this class, you will have many programming assignments, or labs. These lab assignments are all individual efforts unless otherwise specified. There is a two hour lab session associated with this course. This time is used for supplemental instruction and for you to work on your programming assignments. Attendance will be monitored in these labs; however, you may leave early if you complete the lab early. Labs may be submitted late, for a maximum of 80% of the total points, up to 48 hours after the original due date. There will be no resubmissions of labs.

Quizzes, Participation, and Attendance (20%) – You are expected to attend class, participate, and complete the assigned readings. In order to encourage and reward these behaviors, regular quizzes (online and in-class) will be given. You will also participate in group and individual activities on a regular basis that will count towards your final grade. There are no make-ups for missed daily grades and it is your responsibility to consult the course website to determine what was covered during any days you miss and obtain notes from a classmate. Be sure to make use of office hours to meet with me to discuss any issues you have with the material or class assignments.

Grade Scale:  A (90-100%)  B (80-89%)  C (70-79%)  D (60-69%)  F (<60%)

Course Outline: The following is a rough outline and is subject to change. See the course website for the most up to date information.

- **UNIT 1 (Weeks 1-5)**
  - Software Engineering Principles
  - Object-Oriented Design (OOD)
  - Pointers
  - Linked Lists
  - Recursion
  - Exam 1 – February 17th, 2014

- **UNIT 2 (Weeks 6-10)**
  - Stacks
  - Queues
  - Searching and Hashing Algorithms
  - Exam 2 – March 24th, 2014

- **UNIT 3 (Weeks 11-15)**
  - Sorting Algorithms
  - Binary Trees and B-Trees
  - Graphs
  - Data Structures Overview

- **FINAL EXAM:** May 14th, 2014 (1:45pm-4:15pm)

Student Expectations:
- Students are expected to be in attendance, punctual, and prepared for class and labs.
- Assigned readings and quizzes, as discussed in class and usually found in Blackboard, should be completed before coming to the next class. You are expected to read the textbooks. Quizzes will be frequent and will cover the material assigned in the readings.
- Please ask questions on any material that you do not understand; if I cannot explain it to your satisfaction, please see me during my office hours or labs.
- Monitor and use your Islander email regularly.
- Demonstrate integrity, maturity, and ethical behavior.
Academic Honesty Policy: You are expected to avoid all forms of academic dishonesty as defined in Catalog. In addition, students are expected to behave in an ethical manner in all class activities. If you feel uncertain about a particular activity, please speak to me BEFORE problems arise. Ethical behavior is a requirement for passing this course. All work submitted for grading must be the student's own work. Plagiarism will result in a score of 0 (zero) for the work or dismissal from the course and the Dean of Students office will be notified. No copying from another student's work of any type is allowed. It is the student's duty to allow no one to copy his or her work. Anyone found cheating and/or copying, in the exams or assignments, in the instructor's opinion, may receive an automatic F for the course.

Electronic Device Policy: Please refrain from the use of electronic devices during class, as it is distracting to not only you, but also to your instructor and peers. Silence your phones and put them away so you are not tempted to stray off task. Laptops will be permitted for particular activities as deemed appropriate.

Classroom/Professional Behavior: Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

Students with Disabilities: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services Office at (361) 825-5816 or visit CCH 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

Dropping a Class: I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. April 11th is the last day to drop a class with an automatic grade of “W” this term.

Academic Advising: The College of Science and Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. The College's Academic Advising Center is located in CI 366, and can be reached at 825-3721.

Grade Appeals: A student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is on the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details on the process, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, consult Texas A&M University-Corpus Christi University Procedure 13.02.99.C2.01 Student Grade Appeal Procedures
(http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage (http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school or the College of Science and Engineering Dean’s Office.