Texas A&M University – Corpus Christi
COSC 2437: Data Structures
Fall 2014 ~ Section 001/201

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Course Information:
COSC 2437.001 TR 8:00am-09:15am CI 109
COSC 2437.201 R 9:30am-11:20am CI 228

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.

Course 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.

Course Format: This course will be a mixture of lectures and discussions. The student is expected to actively participate in all class activities. The student is also expected to do outside work on assignments and reading. Additionally, students are to attend a weekly lab session.

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

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

Recommended or Supplemental Reading:

Student Evaluation:
- Exams (65%) – There will be two in-class exams worth 20% of the final grade each, as well as a comprehensive final exam worth 25% of the final grade. Please note the dates of the exams on the course schedule below and plan accordingly. Only approved university excuses will be accepted for “Make-Up Exams” and will be different from the in-class version of the exam. If you have a conflict with an exam date, please let me know as soon as you know about the conflict.
- Programming Assignments (25%) - 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 and submit 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 (5%) – You are expected to attend class, participate, and complete the assigned reading. In order to encourage and reward these behaviors, regular quizzes will be given. Know the answers to the “Exercises” in the textbooks. Most, but not all, quiz questions will be pulled from this material. There are no make-ups for missed quizzes.
Class Studies (5%) – Class studies will be assigned in class, which covers weekly topics in course outline. You are expected to attend class with your team members. All work has to be done as a group study. There are no make-ups for missed class studies.

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

Tentative 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 1-6)  
  - Software Engineering Principles  
  - Object-Oriented Design (OOD)  
  - Pointers  
  - Linked Lists  
  - Recursion  
  - Exam 1 – September 30th, 2014

- UNIT 2 (Weeks 7-10)  
  - Stacks  
  - Queues  
  - Searching and Hashing Algorithms  
  - Exam 2 – October 28th, 2014

- UNIT 3 (Weeks 11-15)  
  - Sorting Algorithms  
  - Binary Trees and B-Trees  
  - Graphs

- FINAL EXAM: December 4th, 2014 (08:00am-10:30am)

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.
- Please ask questions on any material that you do not understand; if I do not explain it to your satisfaction, please see me during my office hours or labs.
- Monitor and use your Islander email regularly.
- It is your responsibility to consult the course website and Blackboard page to determine what was covered during any days you miss and obtain notes from a classmate.
- Demonstrate integrity, maturity, and ethical behavior.

Academic Integrity/Plagiarism

University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in F.

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. November 7, 2014 is the last day to drop a class with an automatic grade of “W” this term.

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.

Statement of Civility (can be in place of classroom/professional behavior)

Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Grade Appeals (College of Science and Engineering Version)

As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, 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 upon 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, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at 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, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

Disabilities Accommodations
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 call or visit Disability Services at (361) 825-5816 in Corpus Christi Hall 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.

Statement of Academic Continuity
In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.