A. COURSE INFORMATION

Course number/section: 2437.001
Class meeting time: TR 2:00-3:15 PM
2437.201: T 3:30-5:20 PM
2437.301: R 3:30-5:20 PM
Class location: IH-162
2437.201: CI-228
2437.301: CI-228
Course Website: http://sci.tamucc.edu/~iersoy/ and https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Mr. Burak Ersoy
Office location: CI-342
Office hours: M 10:00 - 1:00 PM
TR 11:00 - 12:00 PM
Telephone: 825-3711
e-mail: burak.ersoy@tamucc.edu
Appointments: Must be scheduled at least week in advance by email

C. 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.

D. PREREQUISITES AND COREQUISITES

Prerequisites
COSC 1436 and MATH 2305

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)

Optional Textbook(s) or Other References
Starting Out with C++: From Control Structures through Objects, 8th Edition by Tony
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

- 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.

By the end of this course, students should be able to:

1. Use knowledge of both computing and mathematics to obtain an efficient and cost-effective solution for a computing problem
2. Analyze a given problem or a system
3. Design a computer-based system, process, component, or program to meet desired needs
4. Apply current software development methodologies or techniques
5. Understand the differences in space/time complexity of algorithms.
6. Apply software principles to solutions to problems of varying complexity
G. INSTRUCTIONAL METHODS AND ACTIVITIES

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.

Please note the dates of the exams on the course schedule below and plan accordingly.

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.

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 “Examples,” “Quick Reviews,” and “Exercises” in the textbooks. Most, but not all, quiz questions will be pulled from this material. There are no make-ups for missed quizzes.

H. MAJOR COURSE REQUIREMENTS AND GRADING

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

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>20</td>
</tr>
<tr>
<td>Exam 2</td>
<td>20</td>
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<tr>
<td>Programming Assignments (Labs)</td>
<td>30</td>
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<tr>
<td>Quizzes</td>
<td>5</td>
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<tr>
<td>Final Exam</td>
<td>25</td>
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I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introduction and Overview</td>
<td></td>
<td>Read Chapter 1, 2</td>
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<tr>
<td>Week 2</td>
<td>Software Engineering Principles, Object-Oriented Design (OOD)</td>
<td>1, 2</td>
<td>Read Chapter 2, 3</td>
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<tr>
<td>Week 3</td>
<td>Object-Oriented Design (OOD), Pointers</td>
<td>2, 3</td>
<td>Read Chapter 5</td>
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<tr>
<td>Week 4</td>
<td>Linked Lists</td>
<td>5</td>
<td>Read Chapter 6</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

Attendance/Tardiness
You are expected to be in attendance, punctual, and prepared for class. If you are more than 5 minutes late to class, you will be counted as tardy. Please make sure that you will never be tardy to any of your classes or accept the consequences.

Late Work and Make-up Exams
NO makeup exams, labs, or quizzes will be allowed unless I have agreed prior to the exam, lab, or quiz time and been provided with official supporting documents.

Extra Credit
There is NO EXTRA CREDIT - don't bother asking.

Cell Phone Use
You are required to turn off your cell phone in class and pay attention to class discussions.

Laptop Use
Use of laptops and other electronic devices is restricted to taking notes.
Food in Class
Eating food in class is Not Allowed.

Missed Exam
Missed exams will be graded as ‘0’.

Participation
Class discussions and information provided in class are considered regular course material; it is your responsibility to take appropriate notes. You are expected to attend lectures and actively participate in class discussions.

Others
Read Section L!!!
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 at 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.

**Disability Services**

Disability Services (DS) is the hub for coordinating services and accommodations to ensure accessibility and utilization of all programs for all Texas A&M University-Corpus Christi students with disabilities. Our services are designed to meet the unique educational needs of enrolled students with documented permanent or temporary disabilities. DS provides intake and consultation services to students seeking to register with our office. DS reviews an individual’s documentation of disability and assesses eligibility for services and the determination of reasonable accommodations. For more information visit the Disability Services Office at 116 Corpus Christi Hall or go to http://disabilityservices.tamucc.edu/

**L. OTHER INFORMATION**

- Exams and quizzes are NOT open-book unless instructed otherwise.
- Not all quizzes times will be announced; pop-up quizzes are likely.
- Assigned readings, 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.
- Start working on your assignments early; last day questions that show carelessness will not be responded to.
- 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.
- Announcements will be made available in class, on course Blackboard page, and/or through Islander email. It is your responsibility to regularly check for announcements.
- It is your responsibility to determine what was covered during any days you miss and obtain notes from a classmate.
- Demonstrate integrity, maturity, and ethical behavior.
GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.