A. **COURSE INFORMATION**

Course number/section: COSC 2437.001  
Class meeting time: MW 02:00 - 03:15PM (Lecture)  
COSC 2437.201: F 10:00am - 11:50am (Lab)  
COSC 2437.301: F 12:00pm - 1:50pm (Lab)  
Class location: CS-101 (Lecture); CI-228 (Lab)  
Course Website: bb9.tamucc.edu (Blackboard)

B. **INSTRUCTOR INFORMATION**

Instructor: Ismail *Ahihan* Hadimlioglu  
Office location: EN-316L  
Office hours: Mon/Wed 10:00am - 1:00pm  
Telephone: 361-825-3688  
E-mail: ismail.hadimlioglu@tamucc.edu  
Appointments: To schedule your visits properly, please send me an e-mail beforehand

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  

Corequisites  
MATH 2305 (Prerequisite or Corequisite)

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 Gaddis, Addison-Wesley (ISBN: 978-0133769395)

Supplies  
Some way to archive your documents (Flash drive, Dropbox/Cloud, etc)
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

Assessment of objectives will be conducted through homework assignments, quizzes and exams.
G. INSTRUCTIONAL METHODS AND ACTIVITIES
This is an intermediate level course. However, this is a difficult course that demands all students attend all classes! Regular completion of all reading, homework, and other outside assignments, are absolutely essential for success in this course.

H. MAJOR COURSE REQUIREMENTS AND GRADING
Your course grade will be decided on your performance in the homework assignments, quizzes, two mid-term exams, and the final exam. The distribution of points is as follows:

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>15</td>
</tr>
<tr>
<td>Exam 2</td>
<td>15</td>
</tr>
<tr>
<td>Homework Assignments</td>
<td>30</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20</td>
</tr>
<tr>
<td>Lab Activity</td>
<td>10</td>
</tr>
</tbody>
</table>

Grading scale: A: 100-90, B: 89-80, C: 79-70, D: 69-60, and F: 59-0.

Homework Assignments: Approximately 10 - 12 homework assignments will be given.

Exams: Check course schedule for dates.
I. **COURSE CONTENT/SCHEDULE**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNED READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 27 – August 29</td>
<td>Introduction and Overview, Software Engineering Principles, complexity analysis</td>
<td>1</td>
<td>Read 1</td>
</tr>
<tr>
<td>September 3 – September 5</td>
<td>Object-Oriented Design (OOD)</td>
<td>1, 2</td>
<td>Read 2, 3</td>
</tr>
<tr>
<td>September 10 – September 12</td>
<td>Pointers</td>
<td>3</td>
<td>Read 5</td>
</tr>
<tr>
<td>September 17 – September 19</td>
<td>Linked Lists</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>September 24, Monday</td>
<td>Exam I Review</td>
<td>1, 2, 3, 5</td>
<td></td>
</tr>
<tr>
<td>September 26, Wednesday</td>
<td>Exam I</td>
<td>1, 2, 3, 5</td>
<td>Read 6</td>
</tr>
<tr>
<td>October 1 – October 3</td>
<td>Recursion</td>
<td>6</td>
<td>Read 7</td>
</tr>
<tr>
<td>October 8 – October 10</td>
<td>Stacks</td>
<td>7</td>
<td>Read 8</td>
</tr>
<tr>
<td>October 15 – October 17</td>
<td>Queues</td>
<td>8</td>
<td>Read 9</td>
</tr>
<tr>
<td>October 22 – October 24</td>
<td>Searching and Hashing Algorithms</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>October 29, Monday</td>
<td>Exam II Review</td>
<td>6, 7, 8, 9</td>
<td></td>
</tr>
<tr>
<td>October 31, Wednesday</td>
<td>Exam II</td>
<td>6, 7, 8, 9</td>
<td>Read 10</td>
</tr>
<tr>
<td>November 5 – November 7</td>
<td>Sorting Algorithms</td>
<td>10</td>
<td>Read 11</td>
</tr>
<tr>
<td>November 12 – November 19</td>
<td>Sorting Algorithms, Binary Trees, B-Trees</td>
<td>10, 11</td>
<td>Read 12</td>
</tr>
<tr>
<td>November 21 – 22 – 23</td>
<td>Reading Day (No Class), Thanksgiving Holiday</td>
<td></td>
<td></td>
</tr>
<tr>
<td>November 26 – November 28</td>
<td>Graphs</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>December 3 – December 5</td>
<td>Graphs, Final Exam Review</td>
<td>10, 11, 12</td>
<td></td>
</tr>
<tr>
<td>December 10, Monday, 1:45pm</td>
<td>Final Exam</td>
<td>10, 11, 12</td>
<td></td>
</tr>
</tbody>
</table>

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
Success in this course depends on your attendance and participation. I do not take attendance every day the class meets yet I might decide to take attendance at some designated days. If you are not in the room in your seat before I start lecturing, you will not be counted as present that day. Attendance and active participation is essential to successfully completing this course. You are expected to know all material presented in class.

Late Work and Make-up Exams
If you notify me immediately about serious and unavoidable circumstances that can be documented (e.g., with a letter from your doctor), I will discuss options for replacing the missing grade. Excused absences due to school sponsored activities, religious observations, family events, etc. should be discussed in advance. Makeup exams will be different from regular exams.
This course uses a late work policy. The following grading scheme will be applied for late labs, assignments, projects and any other submissions:

- 0-1 day: -10
- 1-2 days: -20
- 2-4 days: -40
- 4 days+: No Grade

Extra Credit
Extra credit is not offered so the grading scheme mention in Section H will be used.

Cell Phone Use
You must silence your devices before the class begins.

Laptop Use
You might use your laptops for course-related things such as checking the presentations on your device. You should not work on your labs or assignments in class. The only way you might utilize your laptop is to check the slides I am presenting in class.

Food in Class
Eating in class is not valid so you should eat before or after the lectures outside the class. It is, however, valid to drink water, coffee, sodas, etc. in class unless our classroom is a designated lab.

Missed Exam
It is your responsibility to attend the exams on time. If you miss an exam with no excuse no makeup exam will be provided.

Participation
Participation is vital for your success and therefore, make sure you attend and participate the discussions in class.
K. COLLEGE AND UNIVERSITY POLICIES

- Academic Integrity (University)
  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 a failing grade.

- 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
  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.

- Deadline for Dropping a Course with a Grade of W (University)
  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 your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. 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. Please consult the Academic Calendar [http://www.tamucc.edu/academics/calendar/] for the last day to drop a course.

- Grade Appeals (College of Science and Engineering)
  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 at [http://scit.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
  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 (361) 825-5816 or visit Disability Services 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, [http://disabilityservices.tamucc.edu/]

- 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.

L. OTHER INFORMATION

- Academic Advising
  The College of Science & 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. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

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.