CS 2336 – Data Structures and Algorithms
Spring 2020 Course Syllabus

Instructor: Dr. Mark B. Motl
Email: Mark.Motl@angelo.edu
Office Phone: (325) 486-5420
Office: MCS 205M
Office Hours: MTWRF 8:30 a.m. – 10:30 a.m.
Class Times: TR 11:00 a.m. – 12:15 p.m.
Classroom: MCS 114

Course Information

Course Description
Study of basic data structures and their applications such as: linear structures (arrays, lists, stacks, queues) and non-linear structures (trees, graphs); sequential and linked storage representation methods; sorting and searching algorithms; and techniques of algorithmic analysis.

Prerequisite and Co-requisite Courses
CS 1337

Prerequisite Skills
Two courses in C or C++ programming.

Student Learning Outcomes
Upon completion of this course, students will:

- have a better understanding of the C++ class concept,
- learn techniques of algorithm analysis,
- learn about recursion,
- learn how to use the C++ Standard Template Library (STL) vector container,
- learn programming techniques for sorting,
● learn programming techniques for searching,
● know how to use the STL stack adaptor,
● know how to use the STL queue adaptor,
● know how to use the STL deque container,
● know how to use the STL priority_queue adaptor, and
● know how to use the STL list container.

Course Delivery
This is a face-to-face course with learning resources and supplemental materials posted in Blackboard.

Required Texts and Materials

Communication
Written communication via email: All private communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails to faculty, include the course name and section number in your subject line.

Grading

Evaluation and Grades
Course grades will be determined as indicated in the table below.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percent of Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>14%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>14%</td>
</tr>
<tr>
<td>Exam 3</td>
<td>14%</td>
</tr>
<tr>
<td>Exam 4</td>
<td>14%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>14%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Grading System
Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.
The following grading scale is in use for this course:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90.00 – 100.00</td>
</tr>
<tr>
<td>B</td>
<td>80.00 – 89.99</td>
</tr>
<tr>
<td>C</td>
<td>70.00 – 79.99</td>
</tr>
<tr>
<td>D</td>
<td>60.00 – 69.99</td>
</tr>
<tr>
<td>F</td>
<td>0.00 – 59.99</td>
</tr>
</tbody>
</table>

Please note that grades are not rounded up.

Course Outline
This outline should be considered approximate and tentative.

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – 5</td>
<td>• review of class concept</td>
</tr>
<tr>
<td></td>
<td>• overloaded operators</td>
</tr>
<tr>
<td></td>
<td>• Exam 1</td>
</tr>
<tr>
<td>6 – 7</td>
<td>• recursion</td>
</tr>
<tr>
<td></td>
<td>• function templates</td>
</tr>
<tr>
<td></td>
<td>• Exam 2</td>
</tr>
<tr>
<td>8 – 9</td>
<td>• time complexity</td>
</tr>
<tr>
<td></td>
<td>• algorithm analysis</td>
</tr>
<tr>
<td></td>
<td>• Exam 3</td>
</tr>
<tr>
<td>10 – 12</td>
<td>• vectors</td>
</tr>
<tr>
<td></td>
<td>• Exam 4</td>
</tr>
<tr>
<td>13 – 16</td>
<td>• Adaptors (stacks, queues, priority queues)</td>
</tr>
<tr>
<td></td>
<td>• deques</td>
</tr>
<tr>
<td></td>
<td>• lists</td>
</tr>
<tr>
<td></td>
<td>• Final Exam</td>
</tr>
</tbody>
</table>

Assignment and Activity Descriptions

Programming assignments: The purpose of the programming assignments is to give you individual practice on the topics that you are learning and to explore some ideas more deeply. Assignments will be given frequently for you to complete.

Exams: There will be five exams in online format on Blackboard using Respondus Lockdown browser. All students must take all the exams on the scheduled dates. See
table under Course Outline for approximate exam dates and Class Policies for exam policies.

**General Policies Related to This Course**

All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook
- Angelo State University Catalog

**Attendance**

Attendance is expected, but it will not be used in calculating your final grade.

**Submissions/Late Work**

- All assignments, unless otherwise specified, must be submitted to Blackboard and contain your name, course discipline and number, and the title of the assignment.
- No late assignment will be accepted. No e-mail submission is accepted. There are no exceptions to this rule.

**Exam Policies**

- There are no makeup exams. The only exception will be an absence for observance of a religious holy day (see below).
- The final exam must be taken on its assigned date.

**Academic Integrity**

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university's Statement of Academic Integrity.

**Accommodations for Students with Disabilities**

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the
university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

**Incomplete Grade Policy**

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

**Plagiarism**

Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the ASU Writing Center.
**Student Absence for Observance of Religious Holy Days**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for [Observance of Religious Holy Day](https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php) for more information.

**Title IX at Angelo State University**

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU’s Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
[ michelle.boone@angelo.edu](mailto:michelle.boone@angelo.edu)

You may also file a report online 24/7 at [www.angelo.edu/incident-form](https://www.angelo.edu/incident-form).

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit [www.angelo.edu/title-ix](https://www.angelo.edu/title-ix).

---

1. [https://www.angelo.edu/student-handbook/](https://www.angelo.edu/student-handbook/)
2. [https://www.angelo.edu/catalogs/](https://www.angelo.edu/catalogs/)
4. [https://www.angelo.edu/services/disability-services/](https://www.angelo.edu/services/disability-services/)
5. [https://www.angelo.edu/content/files/14197-op-1011-grading-procedures](https://www.angelo.edu/content/files/14197-op-1011-grading-procedures)