Course Information

Course Description
A survey of ideas in contemporary mathematics. Topics may include graphs and networks, theory of elections and apportionment, statistics, and mathematical models.

Student Learning Outcomes
Upon completion of this course:

1. **The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in a selection from the following topics: basic algebraic techniques, voting theory, apportionment, the mathematics of money, probability, statistics, graph theory, and geometry.

2. **The students will be able to describe generalizations of mathematics to real-world situations.** Students will be able to describe, for example, the role played by mathematics in the theory of voting. The students will be able to describe connections between mathematical concepts and natural and societal phenomena.
3. The students will apply the course material along with techniques and procedures covered in this course to solve various problems and improve decision making. The students will apply such topics related to statistics and probability to improve decision making through a broader understanding of mathematics. They will learn to analyze problems using mathematical ideas and symbolism and learn to obtain the appropriate resources required to better deal with such problems.

4. The students will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields. Students will develop new approaches and algorithms for solving problems related to networking, scheduling and paths. Students will develop basic algebraic skills necessary for the support of their academic careers.

Course Delivery

Statement for Asynchronous Remote Sessions
This is an online course that will be delivered via Blackboard\(^1\). If you choose, you can complete this course without visiting the ASU campus

Please refer to this Health and Safety web page\(^2\) for updated information about campus guidelines as they relate to the COVID-19 pandemic.

Required Texts and Materials
A free textbook is available. Required reading will be posted in Blackboard. All course work will be done in Blackboard and MyOpenMath. MyOpenMath is a free software for mathematics.

Textbook: Math in Society, A survey of mathematics for the liberal arts major, 2\(^{nd}\) ed. by David Lippman. Math in Society (opentextbookstore.com)\(^3\)

Technology Requirements
To successfully complete this course, students need to have access to a computer with internet access. Course videos, and notes will be posted in Blackboard\(^4\).

Communication
Faculty will respond to email and/or telephone messages within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday.

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.
Virtual communication: Office hours will be done using Blackboard® Collaborate. A link will be available in Blackboard®.

Grading

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

- Homework: Homework will be assigned at the end of every lesson. You are expected to complete all homework problems in Blackboard®. Homework will count 40% of your overall grade.
- Exams: 4 exams will be given through Blackboard®. Exams will count 60% of your overall grade. Exam 4 will count as your final exam.

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:
   - A = 90.00-100 points
   - B = 80.00-89.99 points
   - C = 70.00-79.99 points
   - D = 60.00-69.99 points
   - F = 0-59.99 points

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

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.\textsuperscript{15}

**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\textsuperscript{16} 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

You may also file a report online 24/7 at 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.\textsuperscript{17}
Required Use of Masks/Facial Coverings by Students

As a member of the Texas Tech University System, Angelo State University has adopted the mandatory Facial Covering Policy to ensure a safe and healthy classroom experience. Current research on the COVID-19 virus suggests there is a significant reduction in the potential for transmission of the virus from person to person by wearing a mask/facial covering that covers the nose and mouth areas. Therefore, in compliance with the university policy students in this class are required to wear a mask/facial covering before, during, and after class. Faculty members may also ask you to display your daily screening badge as a prerequisite to enter the classroom. You are also asked to maintain safe distancing practices to the best of your ability. For the safety of everyone, any student not appropriately wearing a mask/facial covering will be asked to leave the classroom immediately. The student will be responsible to make up any missed class content or work. Continued non-compliance with the Texas Tech University System Policy may result in disciplinary action through the Office of Student Conduct.

Modifications to the Syllabus

This syllabus, including grade evaluation and course schedule, is subject to modification. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.

Course Schedule

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
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<tbody>
<tr>
<td>1</td>
<td>Syllabus, Basic Elements of an Election, Add, Subtract, Mult, Div of Integers</td>
</tr>
<tr>
<td>2</td>
<td>Preference Schedules, Voting Methods: Plurality, Solving Equations</td>
</tr>
<tr>
<td>3</td>
<td>Voting Methods: Borda, Plurality with Elimination, Pairwise Comparisons</td>
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<tr>
<td>4</td>
<td>Weighted Voting, Banzhaf, Absolute Value</td>
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<tr>
<td>5</td>
<td>Fair Division, Sealed Bids</td>
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<tr>
<td>6</td>
<td>Apportionment</td>
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<tr>
<td>7</td>
<td>Test 1</td>
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<tr>
<td>8</td>
<td>Fractions, Hamilton’s Method; Street-Routing Problems</td>
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<tr>
<td>9</td>
<td>Introduction to Graphs, Euler’s Theorem, Order of Operations</td>
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<tr>
<td>10</td>
<td>Traveling Salesman Problem, Hamilton Paths &amp; Circuits</td>
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<tr>
<td>11</td>
<td>Brute Force Algorithm, Nearest Neighbor Algorithm</td>
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<tr>
<td>12</td>
<td>Networks and Trees, Spanning Trees</td>
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<tr>
<td>13</td>
<td>Kruskal’s Algorithm, Exponents, Add/Sub Polynomials</td>
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<tr>
<td>14</td>
<td>Test 2</td>
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<tr>
<td>15</td>
<td>Midterm Exam (Group A)</td>
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<tr>
<td>16</td>
<td>Midterm Exam (Group B)</td>
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<tr>
<td>17</td>
<td>Math of Finance Definitions, Simple Interest, Compound interest</td>
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<tr>
<td>18</td>
<td>Annuities</td>
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<tr>
<td>19</td>
<td>Distributive Law/Multiplication of Polynomials, Rigid Motions</td>
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<tr>
<td>20</td>
<td>Translations</td>
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<td>Reflections</td>
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<td>-------------------------------------------------</td>
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<tr>
<td>2</td>
<td>Greatest Common Factor</td>
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<td>3</td>
<td>Frequency Tables</td>
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<tr>
<td>4</td>
<td>Graphs &amp; Charts</td>
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<tr>
<td>5</td>
<td>Test 3</td>
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<tr>
<td>6</td>
<td>Means, Medians and Percentiles</td>
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<tr>
<td>7</td>
<td>Factoring, Range and Standard Deviation, Future Value of Annuities</td>
</tr>
<tr>
<td>8</td>
<td>Advanced Rigid Motions, Probability, Radicals</td>
</tr>
<tr>
<td>9</td>
<td>Test 4</td>
</tr>
</tbody>
</table>

1. https://blackboard.angelo.edu
2. Health and Safety | Returning to Campus (angelo.edu)
4. https://blackboard.angelo.edu/
5. https://blackboard.angelo.edu/
6. https://blackboard.angelo.edu/
7. https://blackboard.angelo.edu/
8. https://blackboard.angelo.edu/
10. https://www.angelo.edu/catalogs/
12. https://www.angelo.edu/services/disability-services/
13. https://www.angelo.edu/content/files/14197-op-1011-grading-procedures
15. https://www.angelo.edu/dept/writing_center/academic_honesty.php
16. https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of
17. https://www.angelo.edu/services/title-ix/