**Disclaimer:**
This syllabus is current and accurate as of its posting date, but will not be updated. For the most complete and up-to-date course information, contact the instructor.

**Instructor Information:**
**Instructor:** Mrs. Paula Koca  
**Office:** MCS 220L  
**Office Phone:** (325) 486-5437  
**Email:** paula.koca@angelo.edu

**Office Hours:**
Monday: 10:00am – 12 pm; 3 pm – 3:30 pm  
Tuesday: 11 am – 12:30 pm  
Wednesday: 10:00am – 12 pm; 3 pm – 3:30 pm  
Thursday: 11 am – 12:30 pm  
Friday: 10:00am – 12 pm

**Note:** When contacting me via email or phone, allow 24 hours for a response. I do not make it a habit to check email from home.

**Major Course Requirements**

**Use of Blackboard**
- Handouts will be placed on Blackboard for you to print as necessary.
- They will appear under the tabs labeled **Course Information** (syllabus, office hours, etc.) and **Course Content** (handouts needed for class).
- All students will need a calculator. We will discuss the type of calculator needed on the first day of class.

**Attendance:**
- Attendance will be taken daily and is mandatory for the entire class period.

**Daily Work:**
- Daily work will consist of homework problems assigned in MyMathLab or worksheets supplied to students through Blackboard.
- I will drop 3 homework/quiz grades at the end of the semester.
- **No late homework will be accepted.** The 3 dropped grades are meant to replace homework missed due to illness or emergency. Save them for when you are ill. Once they are used, any missing homework for any reason will be a zero.

**Online Homework:**
- We will be using an online program called MyMathLab for part of the homework this semester. To access MyMathLab, login to Blackboard and select this course. Next, select the tab “MyMathLab HW”. Then, click the link to begin registration and related homework for MyMathLab. You may access MML
anywhere internet is available. Homework is an important part of this class. If you wish to be successful in this class, you must complete the homework

Exams:

- We will have four exams where the fourth exam will be given on final exam day. The fourth exam (final exam) will not be cumulative unless you have missed an exam. The exact dates and coverage of these tests will be announced in class.
- There will be no make-up exams. Therefore, if you miss an exam, you will be required to take a comprehensive final exam which will count as the missed exam grade and the 4th exam. If you are ill on an exam day, please get a note from the clinic and call me immediately.

Grading: Grades will be determined as follows:

- Homework & Quizzes- 20%
- Tests- 20% each
- Final Exam- 20%

Final Grades: Final grades will be determined using the following scale

- A: 90% or above
- B: 80% - 89%
- C: 70% - 79%
- D: 60% - 69%
- F: Below 60%

Math Lab:

- The Mathematics Department offers a Math Lab. This lab is an open lab meaning that you are not required to attend but can come and go as you please and as you need help. It is free tutoring so please take advantage of it!
- Math Lab is located on the third floor of the library, Room C302.
- Math Lab Hours can be found at this location on the Angelo State University website: http://www.angelo.edu/dept/mathematics/lab_hours.php

Class Rules:

- Arrive on time.
- Cell phones are to be turned off during class.
- Cell phones must be placed in backpacks below desk during exams.
- No talking while I am talking – this is disruptive to your fellow students.
- No food or drinks in classrooms unless absolutely necessary (due to illness). If you do need a drink, please be sure it has a cover to prevent spills.
- All students are to be respectful and courteous to each other.

Textbook:

- *Excursions in Modern Mathematics 9th ed.* by Peter Tannenbaum, Prentice Hall

Subject Matter:

<table>
<thead>
<tr>
<th>Week</th>
<th>Materials Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Syllabus, Basic Elements of an Election, Preference Schedules, Voting Methods</td>
</tr>
<tr>
<td>2</td>
<td>Voting Methods, Weighted Voting, Banzoff Power</td>
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</tbody>
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Student Learning Outcomes

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 Content

2. Weighted Voting: The Banzhaf Power Index, The Shapley-Shubik Power Index
4. Apportionment: Various methods including Hamilton’s, Jefferson’s, Adam’s, and Webster’s; The Alabama Paradox
5. Euler Paths and Circuits: Euler Circuit Problems, Graphs, Euler’s Theorems, Fleury’s Algorithm, Eulerizing Graphs
6. The Traveling Salesman Problem: Hamilton Paths and Circuits, Complete Graphs, Greedy and Nearest Neighbor Algorithms
7. Networks: Trees, Spanning Trees, Kruskal’s Algorithm, Shortest Networks for Three or more points
10. Math of Finance: Percentages, Simple Interest, Compound Interest, Annuities
11. Mathematics of Symmetry: Rigid Motions, Reflections, Rotations Translations, Glide Reflections, Patterns
14. Descriptive Statistics: Graphical Methods, Variables, Data Summaries, Spread
15. Probability: Random Experiments, Sample Spaces, Permutations, Combinations, Equiprobable Spaces, Odds
   • Order of Operations- numeric applications for PEMDAS with no variables.
   • The Distributive Law
   • Absolute Value- evaluating the absolute value of numbers as a distance from 0
   • Exponent Rules- basic integer exponents (both positive and negative), along with the product rule, quotient rule, and power rule
   • Simplifying Radicals- simplifying square roots and cube roots with simple variables under the radicals; will include both perfect squares/cubes and others that have to be factored out
   • Polynomial Addition & Subtraction
   • Polynomial Multiplication- both distributive property and FOIL are introduced
   • Factoring by GCF- factoring polynomials strictly by greatest common factor
   • Factoring Basic Trinomials- factoring trinomials with a leading coefficient of 1, or a GCF that lends a leading coefficient of 1.
   • Solving Linear Equations- determine if a number is a solution to an equation; then solving basic linear equations; no rational equations are covered.

University 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

In the event that the university is closed for a scheduled class time, whatever was scheduled for that day and/or whatever was due that day will be scheduled and/or due on the next scheduled class time.

Student Disability Services

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.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
dallas.swafford@angelo.edu

**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](http://www.angelo.edu/incident-form).iii

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**.

**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**iv for more information.

**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**v for more information.
Student Conduct Policies

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 Statement of Academic Integrity.

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 via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

Copyright Policy: Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

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ii [http://www.angelo.edu/catalogs/](http://www.angelo.edu/catalogs/)
iii [http://www.angelo.edu/incident-form](http://www.angelo.edu/incident-form)
iv [http://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of](http://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of)
v [http://www.angelo.edu/content/files/14197-op-1011-grading-procedures](http://www.angelo.edu/content/files/14197-op-1011-grading-procedures)
viii [http://www.angelo.edu/dept/writing_center/academic_honesty.php](http://www.angelo.edu/dept/writing_center/academic_honesty.php)