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
Juan Montemayor  Office: MCS219F  Phone #: 325-486-5438  email: juan.montemayor@angelo.edu

Notice:
You are encouraged to be in attendance during each class meeting. No make-ups will be given for missed quizzes or homework assignment. You will not be allowed to make-up any missed exam. It does not matter whether you have an excused or unexcused absence. If you are late to class or leave early, you may be counted absent for the day. Student must attend the entire period to be counted present. In the event that an exam is missed and a written excuse is given within a reasonable time that is acceptable to instructor, the student will be given the option of taking a comprehensive final exam to replace missed exam. A second missed exam will be automatically entered as a zero.

Use of cell phone in class is strongly discouraged. You are encouraged to put cell phone away when entering classroom. If you have a cell phone out of your pocket/backpack/purse during class lecture or reach and touch into your pocket or purse, you will be considered as making use of cell phone. If such an event occurs, you will be asked to leave the classroom. Disruptions of class lecture will be dealt in the same manner. Personal situations may require you to have cell phone available in case of emergencies – notify instructor of that possibility. Other class rules will be discussed on the first day of class.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 – 10:00 AM 12:30 – 1:00 PM 3:00 – 4:00</td>
<td>12:30 – 1:00 PM 2:00 – 3:00</td>
<td>9:00 – 10:00 AM 12:30 – 1:00 PM 3:00 – 4:00</td>
<td>12:30 – 1:00 PM 2:00 – 3:00</td>
<td>8:30 – 10:00 AM 12:30 – 1:00</td>
</tr>
</tbody>
</table>

Tentative exam dates
Exam 1 October 3 Exam 2 November 3 Exam3 (Final Exam) Monday Dec. 11 @10:30 AM– 12:30 PM

<table>
<thead>
<tr>
<th>Monday – Thursday 9:00am-8:00pm</th>
<th>Friday 9:00am-12:00pm</th>
<th>SUNDAY 4:00 PM – 8:00 PM (Starting Sunday, September 10th)</th>
</tr>
</thead>
</table>

Math Lab is located on the third floor of the library room C302

TEXTBOOK Excursions in Modern Mathematics 9e, Peter Tannenbaum

Internet/Email:
I plan to post assignments and other documents on Blackboard and send you information via email. All current students are required to maintain an @angelo.edu e-mail account (see ASU Electronic Communication Policy http://www.angelo.edu/services/technology/it_policies/ecomm_policy.html ).
You will have three testing periods, with each testing period worth 1/3 of your semester grade.

Each of the testing periods will consist of:

1) A **major exam** – makes up 75% of testing period grade
2) Two - three **take-home chapter tests** – make up 15% of testing period grade (reviews for major exam)
3) **Daily grade**
   Consists of a daily homework grade, a daily quiz grades, and class participation grade
   10% of testing period grade

<table>
<thead>
<tr>
<th>Major exams</th>
<th>Use quizzes and chapter tests to study for major exams. No make-ups on exams. In the event an exam is missed and a prompt written reason is given that is approved by instructor, a comprehensive final exam will be given and the resulting grade will count as your final exam grade as well as missed exam grade.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter tests</td>
<td>You will be given a chapter test at the end of each chapter. These tests are meant to be a review of the material discussed throughout the chapter. You may get as much help as needed from any available source – including other students in class. Some chapters may be combined into a single chapter test.</td>
</tr>
<tr>
<td>Daily grades</td>
<td>Daily grades will be on an almost daily basis. There will be ten grades per testing period. I will drop lowest and average the remaining nine grades. This average will be your daily grade for the testing period.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Each daily grade</th>
<th>is made up of a daily homework grade, a daily quiz grade, and a grade for class participation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Homework</strong></td>
<td>- 40% of daily grade, <strong>Quiz</strong> - 40% of daily grade, <strong>Class participation grade</strong> - 20% of daily grade</td>
</tr>
<tr>
<td></td>
<td>Class participation grade is left up to the discretion of the instructor but attendance and work in class are the major components of this part of grade.</td>
</tr>
</tbody>
</table>

Your semester average will be computed by averaging the three scores from the three testing periods. Further explanation of grading procedure will be given on the first day of class.

**Last Day to Drop** is Friday November 3 – Not all students have the option of dropping

**Final Exam**
Monday Dec. 11 @ 10:30 AM – 12:30 PM

More explanation on grading of homework, quizzes and class participation will be given in class.

**GRADING**


Exams are to be finished on time. No additional time will be given.

All assignments should be written in a form that is legible and easy to read – as much as possible.
You should avoid using writing instruments that leave light print and are hard to read.
Make sure to print your name at the top of front page on all assignments that are turned in.
Calculators may be allowed on quizzes or exams.

There will be some assignments, quizzes, or parts of an exam that will require you to find solutions without the use of a calculator.

When calculators are allowed, they must be non-graphic calculators and all answers must be written as exact solutions. Algebraic work must be shown. No cell phones may be used at any time. Number guessing that gives correct answer will be counted wrong – algebraic responses are required.

Number guessing is never an acceptable method to answer a question

See instructor for additional information on course rules, assignments, and other procedures.

What is a T-Section?

- A T-Section is a college credit bearing course paired with supplemental instruction for those students who are not TSI complete.

- T-Sections allow students to take their college level mathematics class (with supplemental instruction) immediately rather than having to first spend a semester or two taking developmental mathematics courses prior to being allowed to take college level mathematics. This course design is ideal for students who have math deficiencies but are willing to put forth the time and effort needed to complete the course satisfactorily.

- The course materials and lessons for the college level course and supplemental instruction will complement each other. In a way, each part of the T – Section reinforces and helps the other part.

- Learning communities are a great way to begin college life. We will heavily stress learning communities. You will work some problems in groups with each person in the group contributing their fair share to the effort. You will be asked at times to be peer tutors for others that are struggling. The nature of the material is such that (each topic is very different from other topics) each of you will find topics in which you excel and other topics in which you struggle. This is where peer tutoring will become very helpful.

Core Curriculum Student Learning Objectives

- **Core Objective (Critical Thinking):** Gather, analyze, evaluate, and synthesize information relevant to a question or issue. (CT1)
  - **Course Student Learning Objective:** Students will evaluate graphs to determine the presence of an Euler circuit or a spanning tree, and identify node degrees.
  - **Assessment:** Assessment exam that demonstrates CT1.

- **Core Objective (Communication):** Develop, interpret, and express ideas through effective visual communication. (CS3)
  - **Course Student Learning Objective:** Students will perform various rigid motion transformations on plane shapes.
  - **Assessment:** Assessment exam that demonstrates CS3.

- **Core Objective (Empirical and Qualitative Skills):** Manipulate and analyze numerical data and arrive at an informed conclusion. (EQS1)
  - **Course Student Learning Objective:** Students will use the facts, formulas, and techniques to compute various data measures and draw conclusions regarding data sets.
  - **Assessment:** Assessment exam that demonstrates EQS1.
Mathematics 1332 – An Introduction to Contemporary Mathematics - 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: 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.

5. **The T - Section will provide students with skills in a variety of mathematical topics needed to be successful in the credit bearing course Math 1332. Students will gain proficiency in arithmetic and algebraic topics necessary for success in the Contemporary Mathematics section of the course.**

Course Content

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

1. **Mathematics of Voting:** Preference Ballots, Plurality, Borda, Runoff Voting, Pairwise Comparison, Rankings
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
8. **Scheduling:** Directed Graphs, Priority Lists, The Decreasing Time Algorithm, Critical Paths, Independent Tasks
9. **Fibonacci Numbers and the Golden Ratio:** Fibonacci Numbers, The Golden Ratio, Gnomons, Spiral Growth
10. **Math of Finance:** Percentages, Simple Interest, Compound Interest, Annuities
11. **Mathematics of Symmetry:** Rigid Motions, Reflections, Rotations Translations, Glide Reflections, Patterns
12. **Fractals:** The Koch Snowflake, The Sierpinski Gasket, Chaos, The Mandelbrot Set
13. **Collecting Data:** Sampling, Random Sampling, The Capture-Recapture Method, Clinical Studies
14. **Descriptive Statistics:** Graphical Methods, Variables, Data Summaries, Spread
15. **Probability:** Random Experiments, Sample Spaces, Permutations, Combinations, Equi probable Spaces, Odds
16. **Normal Distributions:** Approximately Normal Distributions, Normal Curves, Distributions of Random Events, Statistical Inference.
The subject matter listed below is tentative and subject to change and adaptation. For current updated information about course topics, contact instructor.

<table>
<thead>
<tr>
<th>Week(s)</th>
<th>Topics</th>
</tr>
</thead>
</table>
| 1       | Chapter 1 Mathematics of voting  
Preference ballots, method of election  
majority, plurality, Borda-Count, and other methods as time permits |
| 2       | Finish topics from chapter 1, give out Chapter 1 test  
Begin chapter 2, the power of a player and weighted voting systems |
| 3       | Continue with chapter 2  
Weighted voting, types of voters and quotas, and power index of voter  
The Banzhaf Power Index, The Shapley-Shubik Power Index  
Give out Chapter 2 test  
Begin with chapter 3 – fair division games |
| 4       | Finish Chapter 3, fair-division and sharing,  
Give out Chapter 3 test |
| 5       | Begin with Chapter 4 – apportionment methods  
Review material (chapter tests) for first major exam  
First major exam  
Continue working with Chapter 4  
Give out chapter 4 test |
| 6       | Begin with chapter 5 material – basics of graphs, notation,  
Euler Circuit (and paths) Problems, Euler’s Theorems, Fleury’s Algorithm,  
Eulerizing Graphs  
Chapter 5 Exam – Concept of graphs |
| 7       | More on graph theory concepts,  
Euler paths and circuits Euler and Hamiltonian paths and circuits and common properties, differences  
Hamilton Paths and Circuits, Complete Graphs, Greedy and Nearest Neighbor Algorithms  
Chapter 6 test |
| 8       | Begin with chapter 7 – trees  
Basic concepts, properties, and definitions  
Trees, Spanning Trees, Kruskal’s Algorithm, Shortest Networks for Three or more points |
| 9       | Finish chapter 7, chapter 7 exam,  
General sequences, arithmetic, geometric, Fibonacci sequences, chapter test |
| 10      | Second major Exam  
Begin with chapter 10 |
| 11      | Finish chapter 10, chapter 10 test. |
| 13      | Reflections, translations, rotations, other motions |
| 13      | Golden Ratio, gnomons, Fractals |
| 14      | Measures of central tendency, Basic Probability and preliminary concepts of statistics |
| 15      | Statistics and concepts of a normal curve Normal curves and normal distribution Other topics of interest / review for final exam if time permits |
| 16      | Final exam |
Syllabus Statements

• **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**
  Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

  Michelle Boone  
  Director of Title IX Compliance  
  325-486-6357  
  michelle.boone@angelo.edu

• **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.  

• **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.

• **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.  
• 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 to 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.

• General Policies Related to this Course: All students are required to follow the policies and procedures presented in these documents:
  o Angelo State University Student Handbook
  o Angelo State University Catalog

Academic Honor Code

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at http://www.angelo.edu/forms/pdf/honorcode5.pdf.