Math 3310-010: Introduction to Problem Solving
Spring 2022

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.

Information About COVID-19

Please refer to ASU's COVID-19 (Coronavirus) Updates[1] web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Instructor Information

Dr. Dionne T. Bailey
Office: MCS 220G
Phone: 325-486-5425
Email: Dionne.Bailey@angelo.edu

Student Hours

I will be available for student hours both in-person and virtually. To meet with me in-person, please come by my office in MCS 220G during the following times. To meet with me virtually during the following times, please call my office phone at 325-486-5425. If you are unable to meet with me during the following times, please email me at Dionne.Bailey@angelo.edu to schedule an appointment.

Days	Times
Monday	10:00 am – 12:00 pm
Tuesday	1:00 pm – 2:00 pm
Wednesday	10:00 am – 12:00 pm
Thursday	1:00 pm – 2:00 pm
Friday	10:00 am – 12:00 pm

Course Information

Class Meetings

Our class meetings are scheduled on Monday, Wednesday, and Friday from 8:00 – 8:50 am in MCS 211. This course is face-to-face, and it is not accessible through a live streaming tool. Additionally, in-person attendance is required. All students, faculty and staff are required to

complete the wellness screening every day before coming to campus or leaving their residence hall.

Attendance

You will be required to attend class in person. I will use Navigate to record your in-class attendance each day. You will receive 100 for attending class and zero for missing class. If you miss class, you will need to watch the class recording and take notes. If you submit your notes in Blackboard[2] by 11:59 PM on the next day, then you will receive 90 in place of the zero.

Technology Requirements

To successfully complete this course, students need to have a smart phone and access to a laptop, desktop computer, or tablet with a reliable internet connection.

Tests

We will have four written tests and a cumulative final exam. All exams must be proctored either by me or an authorized testing center. The exam dates are listed in the course schedule below. Contact me immediately if you are unable to take an exam at the scheduled date.

Daily Work

Daily work will consist of homework problems from the textbook. You will complete the homework assignment on paper and include your work. Then you will take a photo/scan of all of your work and use a scanner or a smart phone app to create a pdf file. Then you will submit this pdf file through Blackboard. Contact me immediately if you are unable to complete an assignment.

Grade Calculation

Your grade on attendance will count for 10%, your grade on your daily work will count for 10%, your test average will count for 60%, and the cumulative final examination will count for 20%.

The following grading scale is in use for this course:
A = 90.00-100
B = 80.00-89
C = 70.00-79
D = 60.00-69
F = 0-59

Student Learning Outcomes

1. **The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Learn the vocabulary, symbolism, and basic definitions used in this course including definitions and terminology used in algebra; trigonometry; analytic geometry; transformational geometry; finance; linear programming; and progressions.

2. **The students will describe the fundamental principles including laws and theorems arising from concepts covered in this course.** Become familiar with the laws and formulas that result directly from the definitions used in algebra; trigonometry; analytic geometry; transformational geometry; finance; linear programming; and progressions.
3. **The students will apply course material along with techniques and procedures covered in this course to solve problems.** Use the facts, formulas, and techniques learned in this course to solve application problems in a variety of fields to include physics; chemistry; business; life sciences; and social sciences.
4. **The students will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.** Acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic fields requiring a solid background in mathematics as a prerequisite, or for work in occupational fields requiring a solid background in mathematics. These fields might include teaching mathematics in the secondary schools; engineering; physics; business; life sciences; and social sciences.

Prerequisite

Mathematics 1316, 2312, and 2413.

Required Texts and Readings

Precalculus: Graphical, Numerical, Algebraic, Eighth Edition, by Demana, Waits, Foley, and Kennedy

Table of Contents

Chapter P. Prerequisites: Real Numbers; Cartesian Coordinate System; Solving Equations Graphically, Numerically, and Algebraically; Complex Numbers.
Chapter 1. Functions and Graphs: Modeling with Functions; Inverse Functions; Graphical Transformations.
Chapter 2. Polynomial Functions, Power and Rational Functions: Linear and Quadratic Functions and Modeling; Power Functions with Modeling; Real Zeros of Polynomial Functions; Complex Zeros and the Fundamental Theorem of Algebra; Graphs of Rational Functions.
Chapter 4. Trigonometric Functions: Graphs of Sine and Cosine: Sinusoids; Solving Problems with Trigonometry.
Chapter 5. Analytic Trigonometry: Fundamental Identities; The Law of Sines; The Law of Cosines.
Chapter 6. Applications of Trigonometry: Vectors in the Plane; De Moivre's Theorem and nth Roots.
Chapter 7. Systems of Equations and Matrices: Linear Programming.
Chapter 9. Discrete Mathematics: Basic Combinatorics; The Binomial Theorem; Probability; Sequences; Series.

Course Schedule

The subject matter schedule listed below is tentative, and subject to change and adaptation. For current, updated information about course topics, contact the instructor.

Wednesday, January 19, 2022

- Syllabus and Advising

Friday, January 21, 2022

- Section P.1 Real Numbers

Monday, January 24, 2022

- Section P.1 Real Numbers
  (Due Friday, January 28 at 11:59 PM)

Wednesday, January 26, 2022

- Section P.2 Cartesian Coordinate System

Friday, January 28, 2022

- Section P.2 Cartesian Coordinate System
  (Due Tuesday, February 1 at 11:59 PM)

Monday, January 31, 2022

- Section P.5 Solving Equations Graphically, Numerically, and Algebraically
  (Due Friday, February 4 at 11:59 PM)

Wednesday, February 02, 2022

- Section P.6 Complex Numbers
  (Due Tuesday, February 8 at 11:59 PM)

Friday, February 04, 2022

- Section 1.7 Modeling with Functions

Monday, February 07, 2022

- Section 1.7 Modeling with Functions
  (Due Friday, February 11 at 11:59 PM)

Exam 1

- Wednesday, February 9 from 7:30 am – 8:50 am

Friday, February 11, 2022

- Section 1.5 Inverse Functions
  (Due Tuesday, February 15 at 11:59 PM)

Monday, February 14, 2022

- Section 2.1 Linear and Quadratic Functions and Modeling
  (Due Friday, February 18 at 11:59 PM)

Wednesday, February 16, 2022

- Section 2.2 Power Functions with Modeling
  (Due Tuesday, February 22 at 11:59 PM)

Friday, February 18, 2022

- Section 2.4 Real Zeros of Polynomial Functions

Monday, February 21, 2022

- Section 2.4 Real Zeros of Polynomial Functions
  (Due Friday, February 25 at 11:59 PM)

Wednesday, February 23, 2022

- Section 2.5 Complex Zeros and the Fundamental Theorem of Algebra
  (Due Tuesday, March 1 at 11:59 PM)

Friday, February 25, 2022

- Section 1.6 Graphical Transformations
  (Due Tuesday, March 1 at 11:59 PM)

Monday, February 28, 2022

- Section 2.6 Graphs of Rational Functions

Wednesday, March 02, 2022

- Section 2.6 Graphs of Rational Functions
  (Due Tuesday, March 8 at 11:59 PM)

Friday, March 04, 2022

- Section 4.4 Graphs of Sine and Cosine Sinusoids

Monday, March 07, 2022

- Section 4.4 Graphs of Sine and Cosine Sinusoids
  (Due Friday, March 11 at 11:59 PM)

Exam 2

- Wednesday, March 9 from 7:30 am – 8:50 am

Friday, March 11, 2022

- Section 5.1 Fundamental Trigonometric Identities
  (Due Tuesday, March 22 at 11:59 PM)

Monday, March 14, 2022

- Spring Break

Wednesday, March 16, 2022

- Spring Break

Friday, March 18, 2022

- Spring Break

Monday, March 21, 2022

- Section 4.8 Solving Problems with Trigonometry
  (Due Friday, March 25 at 11:59 PM)

Wednesday, March 23, 2022

- Section 5.5 The Law of Sines

Friday, March 25, 2022

- Section 5.5 The Law of Sines
  (Due Tuesday, March 29 at 11:59 PM)

Monday, March 28, 2022

- Section 5.6 The Law of Cosines

Wednesday, March 30, 2022

- Section 5.6 The Law of Cosines
  (Due Tuesday, April 5 at 11:59 PM)

Friday, April 01, 2022

- Section 6.1 Vectors in the Plane

Monday, April 04, 2022

- Section 6.1 Vectors in the Plane
  (Due Friday, April 8 at 11:59 PM)

Exam 3

- Wednesday, April 6 from 7:30 am – 8:50 am

Friday, April 08, 2022

- Section 6.6 De Moivre's Theorem and nth Roots

Monday, April 11, 2022

- Section 6.6 De Moivre's Theorem and nth Roots
  (Due Friday, April 15 at 11:59 PM)

Wednesday, April 13, 2022

- Section 9.1 Basic Combinatorics

Friday, April 15, 2022

- Section 9.1 Basic Combinatorics
  (Due Tuesday, April 19 at 11:59 PM)

Monday, April 18, 2022

- Section 9.2 The Binomial Theorem
  (Due Friday, April 22 at 11:59 PM)

Wednesday, April 20, 2022

- Section 9.3 Probability

Friday, April 22, 2022

- Section 9.3 Probability
  (Due Tuesday, April 26 at 11:59 PM)

Monday, April 25, 2022

- Section 9.4 Sequences

Exam 4

- Wednesday, April 27 from 7:30 am – 8:50 am

Friday, April 29, 2022

- Section 9.4 Sequences
  (Due Tuesday, May 3 at 11:59 PM)

Monday, May 02, 2022

- Section 9.5 Series
  (Due Friday, May 6 at 11:59 PM)

Wednesday, May 04, 2022

- Section 7.5 System of Inequalities
  (Due Friday, May 6 at 11:59 PM)

Friday, May 06, 2022

- Final Exam Review

Final Exam

- Monday, May 9 from 7:30 am – 10:00 am

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[3]
- Angelo State University Catalog[4]

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[5] (Page 97).

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.[6] The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dr. 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[7] 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. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day[8] for more information.

Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: Incident Reporting Form[9]
Face to Face: Mayer Administration Building, Room 210
Phone: 325-942-2022
Email: michelle.miller@angelo.edu

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit the Title IX website.[10]

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[1] https://www.angelo.edu/covid-19/
[2] https://blackboard.angelo.edu/
[3] https://www.angelo.edu/current-students/student-handbook/
[4] https://www.angelo.edu/academics/catalog/
[5] https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=97
[6] https://www.angelo.edu/current-students/disability-services/
[7] https://angelo.policystat.com/policy/10659448/latest/
[8] https://angelo.policystat.com/policy/10659368/latest/
[9] https://www.angelo.edu/incident-form
[10] https://www.angelo.edu/title-ix