MATH 0300 - Fundamentals of Mathematics .401 Course Syllabus

Description

The course supports students in developing skills, strategies, and reasoning needed to succeed in mathematics, including communication and appropriate use of technology. Topics include the study of numeracy and the real number system; algebraic concepts, notation, and reasoning; quantitative relationships; mathematical models; and problem solving.

Semester Offered
Fall
Winter
Spring
May
Summer 1/2
Credits 3
Lecture Hours 3
Lab Hours 0
Extended Hours 0
Contact Hours 48
State Approval Code 32.0104.51 19
Instructor Name Emily Zabcik
Semester/Year Fall 2024

Meeting Time and Location

Online—students are expected to spend at least 3-4 hours per week** reading, reviewing, and participating in assigned activities for successful completion of this course.

Alternate Operations During Campus Closure

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website (www.panola.edu) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

Student Basic Needs

Unexpected circumstances may arise, but Panola College offers various resources to support students. If you need mental health services or are facing challenges with transportation, affording class materials and supplies, or accessing food regularly—issues that may impact your class performance—please visit panola.edu/resources.

Class Attendance

Regular and punctual attendance of classes and laboratories is required of all students. When a student has been ill or absent from class for approved extracurricular activities, he or she should be allowed, as far as

possible, to make up for the missed work. If a student has not actively participated by the census date, they will be dropped by the instructor for non-attendance. This policy applies to courses that are in-person, online, hybrid, and hyflex.

Attendance in online courses is determined by submission of an assignment or participation in an activity. According to federal guidelines, simply logging into a distance learning course without participating in an academic assignment does not constitute attendance. Distance learning is defined as when a majority (more than 50%) of instruction occurs when the instructor and students are in separate physical locations. Students must engage in an academic activity prior to the course census date.

When an instructor feels that a student has been absent to such a degree as to invalidate the learning experience, the instructor may recommend to the Vice President of Instruction that the student be withdrawn from the course. Instructors may seek to withdraw students for non-attendance after they have accumulated the following number of absences:

Fall or spring semesters:

3 or more class meeting times per week - 5 absences

2 class meeting times per week - 3 absences

1 class meeting per week - 2 absences

The student is responsible for seeing that he or she has been officially withdrawn from a class. A student who stops attendance in a class without officially withdrawing from that class will be given a failing grade; consequently, the student must follow official withdrawal procedures in the Admissions/Records Office.

Please note: Health Science and Cosmetology courses may require more stringent attendance policies based on their accreditation agencies. Please see the addendum and/or program handbook for further information concerning attendance.

Pregnant/Parenting Policy

Panola College welcomes pregnant and parenting students as a part of the student body. This institution is committed to providing support and adaptations for a successful educational experience for pregnant and parenting students. Students experiencing a need for accommodations related to pregnancy or parenting will find a Pregnancy and Parenting Accommodations Request form in the Student Handbook or may request the form from the course instructor.

Artificial Intelligence (AI) Course Policy

There are situations throughout the course where you may be permitted to use artificial intelligence (AI) tools to aide in further understanding of mathematical concepts. However, AI tools may not be used for any graded assignments including but not limited to exams, quizzes, and projects. Use of any AI-generated content in this course without the instructor's consent qualifies as academic dishonesty and violates Panola College's standards of academic integrity.

Instructional Goals and Purposes

The purpose of this course is to increase academic proficiency in expression of mathematical solutions have mathematical reasoning, and mathematical understanding.

Learning Outcomes

After studying all materials and resources presented in the course, the student will be able to:

1. Use appropriate symbolic notation and vocabulary to communicate, interpret, and explain mathematical concepts.
2. Define, represent, and perform operations on real numbers, applying numeric reasoning to investigate and describe quantitative relationships and solve real world problems in a variety of contexts.
3. Use algebraic reasoning to solve problems that require ratios, rates, percentages, and proportions in a variety of contexts using multiple representations.
4. Apply algebraic reasoning to manipulate expressions and equations to solve real world problems.
5. Use graphs, tables, and technology to analyze, interpret, and compare data sets.
6. Construct and use mathematical models in verbal, algebraic, graphical, and tabular form to solve problems from a variety of contexts and to make predictions and decisions.

Course Content

A general description of lecture/discussion topics included in this course are listed in the Learning Outcomes section of this syllabus.

The content for this course is aligned with the Texas College Readiness Standards as adopted by the Texas Higher Education Coordinating Board.

I. **Numeric Reasoning**
   a. Number representation and operations
      i. Compare and order real numbers using mathematical symbols (=, ≠, <, >).
      ii. Understand that numbers can be represented in different ways and convert between the different representations – fractions, mixed numbers, decimals have percentages, scientific notation.
      iii. Perform Computations with real numbers – including the four operations on integers, fractions, decimals, and percentages, evaluating exponents and square roots, and using order of operations.
   b. Number sense and number concepts
      i. Use estimation to check for errors and reasonableness of solutions.
      ii. Interpret the relationships between different representations of numbers.
   c. Systems of measurement
      i. Select or use appropriate units of measurement

II. **Algebraic Reasoning**
   a. Identifying expressions and equations
      i. Explain the difference between expressions and equations.
      ii. Manipulating Expressions
      iii. Use algebraic properties, concepts, and algorithms to simplify, combine, and evaluate expressions.
   b. Solving linear equations in one variable
      i. Use the properties of equality to solve equations (one-step, two-step, and multistep equations).
   c. Linear equations in two variables
      i. Graph linear equations in the coordinate plane by plotting order pairs.
      ii. Find x- and y-intercepts, graph by plotting intercepts.
      iii. Calculate slope of a line using a graph or the slope-formula.
      iv. Write an equation for a line in slope-intercept form.
      v. Use a linear equation to model a real-world situation.

III. **Geometric and Spatial Reasoning**
   a. Figures and their properties
   b. Recognize characteristics of two- and three-dimensional figures.
   c. Measurements involving geometry and algebra
   d. Find the perimeter and area of two-dimensional figures.
      i. Determine the volume of three-dimensional figures.
      ii. Use appropriate units of measurement.

IV. **Probabilistic Reasoning**
   a. Counting principles
      i. Determine the nature and the number of elements in a finite sample space.
   b. Computation and interpretation of probabilities
      i. Compute and interpret the probability of an event and its complement.
      ii. Compute and interpret the probability of compound events.

V. **Statistical Reasoning**
   a. Describe data
      i. Classify types of data.
      ii. Use graphs and charts to visually represent data (pictographs, bar graphs, line graphs, histograms, and stem-and-leaf plots).
      iii. Read and interpret information from graphs and charts of data.
      iv. Compute measures of center and basic notions of spread (including mean have median, mode, range and midrange).
   b. Analyze, interpret, and draw conclusions from data

i. Analyze data sets using graphs and summary statistics.
ii. Identify and explain misleading uses of data.

VI. **Problem Solving and Reasoning**
   a. Proportional reasoning
      i. Use proportional reasoning to solve problems that require fractions, ratios have percentages, decimals, and proportions in a variety of contexts using multiple representations.

Methods of Instruction/Course Format/Delivery

Methods of Instruction/Course Format/Delivery: Methods employed will include Lecture/demonstration have discussion, problem solving, analysis, and reading assignments. Homework will be assigned. Faculty may choose from but are not limited to, the following methods of instruction:

1. Lecture
2. Discussion
3. Internet
4. Video
5. Television
6. Demonstrations
7. Field trips
8. Collaboration
9. Readings

The Mathematics Department does not accept late work.

Major Assignments/Assessments

The following items are assigned and assessed during the semester and used to calculate the student's final grade.

Course Grade

Assignment Weights:

1. Daily Grades 25%
2. Major Exams 50%
3. Comprehensive Final Exam 25%

Letter Grades for the Course will be assigned as follows:

TSI COMPLETE: A: 90 < Average < 100
B: 80 < Average < 90
C: 70 < Average < 80 TSI INCOMPLETE:
D: 60 < Average < 70
F: 00 < Average < 60

TEXAS SUCCESS INITIATIVE (TSI): You must have a C or better or pass the MATH Section of the TSI Assessment to be considered TSI complete. Students who pass the MATH Section of the TSI Assessment can choose to withdraw from the course immediately and receive the higher of either their current grade or a C, a W, or they may choose to finish the semester and receive the grade earned based on the grading schedule.

You must have a C or better to move on from this course!!!

Note that if you are passing the course at midterm (with a C or better) but do not successfully complete the course with a C or better, you will be considered Co-Requisite Ready and may enroll in a 1300 level Mathematics course with a co-requisite support in the next semester.

Texts Materials, and Supplies

- The text and resources for this course are provided by the NROC Developmental Mathematics Program. Panola College is a member of NROC; use of this program is free to the students.
- Canvas Access
- Other materials as assigned by the instructor.

Addendum

Each student will adhere to the instructor's course handout presented in the Canvas Course. See link for details.

Other

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: https://www.panolacollegestore.com.
- For testing services, use the following link: https://www.panola.edu/student-services/studentsupport/academic-testing-center.
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to https://www.panola.edu/studentservices/student-support/disability-support-services for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook: https://www.panola.edu/ (located on at the bottom under student)