Course Title: Mathematics for General Studies

Description: Mathematics for General Studies. Three credits. This satisfies the General Education Mathematics requirement and is also part of the mathematics sequence for students preparing to become elementary school teachers. Topics include logic, sets, algebraic reasoning, probability, statistics, and consumer mathematics.

Prerequisites: Two years of high school algebra and a Math Enhanced ACT of at least 19, or COMPASS placement.

Semester, Section Number, and Classroom:

Instructor:

Office:

E-mail/Phone

Office Hours:

Webpage:

Attendance:

Attendance is required at each class meeting. Participation in University sanctioned activities or in military duties and situations where the institution’s policy on inclement weather is applicable are considered excused absences. However, non-attendance does not relieve a student of the responsibility for work covered or assigned. The instructor will keep a record of attendance for each student.


Calculator: A TI-83 or TI-84 Plus graphing calculator is required for this course.

Purpose:

The goal of this course is to expand students’ understanding of mathematics beyond the entry-level requirements for college. Topics include, but are not limited to, problem solving, set theory, logic, counting methods, probability, statistics, and financial management. The student’s mathematical skills are fostered in the areas of mathematical modeling with applications, problem solving, critical thinking skills, and the use of appropriate technologies.
Learning Outcomes:

Upon completion of this course with a passing grade, the student will:

- Use inductive reasoning to generate hypotheses from identifiable mathematical patterns.
- Use logical operators in applications of deductive reasoning.
- Illustrate and prove set relationships using Venn diagrams.
- Carry out combined set operations and use the tools of set theory to solve problems involving surveys.
- Use concepts of logic and set theory to analyze logical arguments.
- Use counting techniques and determine the probability of, odds for, and odds against given events.
- Generate descriptive statistics, including measures of central tendency, measures of dispersion and measures of position, for given data sets.
- Develop and utilize formulas involving simple and compound interest.
- Solve problems involving truth in lending, amortization of loans, and financial investments.
- Apply processes of problem-solving (including the tool of algebra) in the various mathematical content areas of the course.
- Recognize connections between various mathematical content areas of the course; for example, set theory and probability (the sample space for an experiment is a set); probability and statistics (the area under the normal curve is a probability; mathematics of finance and algebra (the formula for future value of money under compound interest is the nth term of a geometric sequence); logic and set theory (logical arguments can be analyzed using Venn Diagrams).
- Use appropriate technology in related mathematical applications; for example, use a graphing calculator to conduct probability simulations and a spreadsheet to examine an amortization schedule.

TBR General Education Mathematics Goal & Learning Outcomes:

**TBR Goal:**
The goal of this course is to expand students’ understanding of mathematics beyond the entry-level requirements for college and to extend their knowledge of mathematics through relevant mathematical modeling with applications, problem solving, critical thinking skills, and the use of appropriate technologies.

**TBR Learning Outcomes:**

Upon completion of this course, students will demonstrate the ability to:

1. Use mathematics to solve problems and determine if the solutions are reasonable.
2. Use mathematics to model real world behaviors and apply mathematical concepts to the solution of real-life problems.
3. Make meaningful connections between mathematics and other disciplines.
4. Use technology for mathematical reasoning and problem solving.
5. Apply mathematical and/or basic statistical reasoning to analyze data and graphs.
Course Requirements:
In order to accomplish the learning outcomes of this course, the learner is required to:

- Attend class sessions
- Participate in class activities
- Read and study assignments
- Solve assigned problem sets
- Complete test, quizzes, homework, etc.
- Complete a comprehensive final exam

*If you do not take the final exam, you cannot pass the course.*

Course Topics: This course consists of selected topics including, but not restricted to, problem solving, set theory, logic, counting methods, probability, statistics, and financial management.

Sections to Be Covered:
- Chapter 1: 1.1, 1.2, 1.3
- Chapter 2: 2.1, 2.2, 2.3
- Chapter 3: 3.1, 3.2, 3.3, 3.4, 3.5
- Chapter 10: 10.1, 10.2, 10.3, 10.5
- Chapter 11: 11.1, 11.2, 11.3, 11.5
- Chapter 12: 12.1, 12.2, 12.3, 12.4
- Chapter 13: 13.1, 13.3, 13.4, 13.5

Course Evaluation and Grading:
Alternative assessments, such as, collaborative investigations, projects, presentations, homework, group work, etc. – 15-20%
In-class quizzes and tests – 55-60%
Departmental comprehensive final exam – 25%

**NOTE:** The final will only be given at the time noted below (under important dates) in the regular class meeting room. Any student who misses the schedule final exam will automatically be assigned the grade of F.

**Grading Scale:** A: 90-100%; B: 80-89%; C: 70-79%; D: 60-69%; F: Below 60%.

Important Dates:

<table>
<thead>
<tr>
<th>Last Day to drop without a grade:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Day to drop with a W:</td>
</tr>
<tr>
<td>Final Exam Time and Date:</td>
</tr>
</tbody>
</table>
Judicial Statement/Academic Misconduct:

Academic misconduct is defined as plagiarism, cheating, fabrication, or facilitating any such act. For purposes of this section, the following definitions apply:

(1) Plagiarism. The adoption or reproduction of ideas, words, statements, images, or works of another person as one’s own without proper acknowledgment.

(2) Cheating. Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. The term academic exercise includes all forms of work submitted for credit or hours.

(3) Fabrication. Unauthorized falsification or invention of any information or citation in an academic exercise.

(4) Facilitation. Helping or attempting to help another to violate a provision of the institutional code of academic misconduct.

Academic misconduct will result in actions taken as defined by the MTSU code of Academic Integrity. A complete description of this code can be found at www.mtsu.edu/judaff. In addition to other possible disciplinary sanctions that may be imposed through regular institutional procedures as a result of academic misconduct, the instructor has the right to assign an F or a zero for the work in question, or to assign an F for the course. If a student believes he or she has been falsely accused of academic misconduct, and if his or her final grade has been lowered as a result, the student may appeal the case through the appropriate institutional procedures.

Drop/Withdrawal Policy and Dates:

Please note the Drop Policy and Withdrawal Procedures as they are stated in the Current Registration Guide. A grade of “I” will be given only in accordance with University Policy. No grade of “W” will be assigned after the official drop date except in situations involving extreme extenuating circumstances beyond the student’s control. In particular, a “W” will not be granted merely because the student is failing. Students should be aware that missing the official drop date and thereby receiving an “F” can have ramifications on financial aid.

General conduct in class:

The instructor has primary responsibility for control over all classroom behavior and can direct the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct which otherwise violates the general rules and regulations of MTSU.
Make-Up Policy:
Make-ups will not be given for anything other than in-class exams, and only with the instructor's prior consent (emergencies excepted). A University approved excuse must be provided in order to be given a make-up exam and, depending on circumstances, the instructor has the right to not give a make-up exam.

Lottery Scholarship Policy:
Do you have a lottery scholarship? To retain the Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. A grade of C, D, F, FA, or I in this class may negatively impact TELS eligibility.

If you drop this class, withdraw, or if you stop attending this class you may lose eligibility for your lottery scholarship, and you will not be able to regain eligibility at a later time.

For additional Lottery rules, please refer to your Lottery Statement of Understanding form (http://www.mtsu.edu/financial-aid/forms/LOTFEV.pdf) or contact your MT One Stop Enrollment Coordinator (http://www.mtsu.edu/one-stop/counselor.php).

Math Tutoring Lab:
Math tutoring for this course is available as a free service to MTSU students in Walker Library, Room 462. Tutoring is conducted by Graduate Teaching Assistants (GTAs), work study students, and a faculty coordinator. The hours of operation are posted in the lab. More information is available at http://mtsu.edu/math/students.php#tutoring.

Reasonable Accommodation for Students with Disabilities:
Middle Tennessee State University is committed to campus access in accordance with Title II of the Americans with Disabilities Act and Section 504 of the Vocational Rehabilitation Act of 1973. Any student interested in reasonable accommodations can consult the Disability & Access Center (DAC) website and/or contact the DAC for assistance at 615-898-2783 or dacemail@mtsu.edu.