Math 1630 Course Syllabus

Course Title:
College Mathematics for Managerial, Social, and Life Sciences

Course Description:
Three credits. This course satisfies the General Education Mathematics requirement and meets specific requirements for programs as outlined in the MTSU Undergraduate Catalog. Topics include solving systems of linear equations, Leontief models, linear programming, mathematics of finance, set theory, and probability theory.

Course Prerequisites:
Two years of high school algebra and a Math Enhanced ACT score of at least 25 or a passing grade in MATH 1710.

Instructor Information:

Instructor:

Office:

E-mail/Phone:

Office Hours:

Webpage:

Attendance Policy:
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.

Required Materials:

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

Course Purpose:
The purpose of the course is to apply mathematics to problems that arise in Managerial, Social, and Life Sciences. Topics include solving systems of linear equations, Leontief models, linear programming, the mathematics of finance, set theory, and probability theory. 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:

- Have enhanced ability to reason mathematically and enhanced problem solving skills.
- Be able to apply algebraic and matrix methods to the solution of practical problems, including understanding reasonableness of answers and problem assumptions.
- Have enhanced ability to use the graphing calculator to better understand linear systems and linear inequalities.
- Have a better understanding of the mathematical tools to deal with compound interest and annuities.
- Have developed familiarity with vocabulary and concepts of present value, future value, and amortization.
- Be able to solve systems of linear equations by a variety of methods.
- Be able to solve linear programming problems both graphically and using the simplex method.
- Be able to apply counting principles in the computation of simple and compound probabilities.

General Education Mathematics Goal and Learning Outcomes:

Goal:
The goal of mathematics 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.

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

- Use mathematics to solve problems and determine if the solutions are reasonable.
- Use mathematics to model real world behaviors and apply mathematical concepts to the solution of real-life problems.
- Make meaningful connections between mathematics and other disciplines.
- Use technology for mathematical reasoning and problem solving.
- 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 lectures
- Participate in class activities
- Read and study assignments
- Solve assigned problem sets
- Complete test, quizzes, homework, etc.
- Complete a comprehensive final exam
Course Topics:
This course consists of selected topics from Chapters 1, 2, 3, 4, 5, 7, and 8 in the required text, including linear functions; solutions to linear systems; linear programming and the simplex method; counting principles; and probability.

Sections To Be Covered:

<table>
<thead>
<tr>
<th>Chapter:</th>
<th>Sections Covered:</th>
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<tbody>
<tr>
<td>1: Functions and Applications</td>
<td>1.1 – 1.4</td>
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<tr>
<td>2: Finance</td>
<td>2.1 – 2.3</td>
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<tr>
<td>3: Systems of Linear Equations and Matrices</td>
<td>3.1 – 3.3</td>
</tr>
<tr>
<td>4: Matrix Algebra</td>
<td>4.1 – 4.3</td>
</tr>
<tr>
<td>5: Linear Programming</td>
<td>5.1 – 5.5</td>
</tr>
<tr>
<td>7: Sets and Counting</td>
<td>6.1 – 6.4</td>
</tr>
<tr>
<td>8: Probability Topics</td>
<td>7.1 – 7.5</td>
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</tbody>
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Course Evaluation and Grading:

- Alternative assessments, such as, collaborative investigations, projects, presentations, homework, group work, etc. will account for 15 to 20% of the final grade.
- In-class quizzes and tests will account for 55 to 60% of the final grade.
- Comprehensive final exam accounts for 25% of the final grade. Note: The final will only be given at the time noted below (under important dates) in the regular class meeting room. Any student who missed the scheduled final exam will automatically be assigned the grade of F.

Grading Scale:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>90 – 100</td>
<td>A</td>
</tr>
<tr>
<td>80 – 89</td>
<td>B</td>
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<tr>
<td>70 – 79</td>
<td>C</td>
</tr>
<tr>
<td>60 – 69</td>
<td>D</td>
</tr>
<tr>
<td>Below 60</td>
<td>F</td>
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Test Dates:
Test 1:
Test 2:
Test 3:
Test 4:

Final Exam Time and Date:
If you do not take the final exam, you cannot pass the course.
**Important Dates:**
Last Day to drop without a grade:

Last Day to drop with a W:

Final exam Time and Date:

**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 MTSU’s webpage for Judicial Affairs and Mediation services. 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/LOTFOD.pdf) or contact your MT One Stop Enrollment Counselor (http://www.mtsu.edu/one-stop/counselor.php).

**Reasonable Accommodations for Students with Disabilities:**
Reasonable Accommodations 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 www.mtsu.edu/dac and/or contact the DAC for assistance at 615-898-2783 or dacemail@mtsu.edu.

**Free Tutoring:**
Math tutoring for this course is available as a free service to MTSU students in the James E. Walker Library, 1st floor. Tutoring is fundamental to your success as a student. At every level of your academic journey, you will discover that tutoring assists your understanding, recollection, and application of what was presented in the classroom.

Take advantage of our FREE tutoring service and learn how to study, get help with understanding difficult course material, receive better test grades, or simply improve your grade point average. Tutoring is available in study skills and learning strategies that includes sessions on time management, notetaking, when and where to study, and memory principles. Tutoring is also available in over 200 courses including biology, history, computer information systems, physics, math, psychology, chemistry, economics, recording industry, and many more. The central location for tutoring is the Tutoring Spot, located in Walker Library, but is also conducted at various other campus sites. For available tutoring opportunities, visit http://mtsu.edu/studentsuccess/tutoring.php#on. For questions, call the Tutoring Spot at 615-904-8014.