Mathematics

Math 1730 Course Syllabus

Course Title:

Pre-Calculus

Course Description:

Pre-Calculus. Four credits. An integrated and rigorous study of the algebra and trigonometry needed to successfully attempt calculus. Emphasis on functions, their analysis and their applications. Level of algebraic sophistication developed above that found in MATH 1710. Topics include exponentials and logarithms, analysis of graphs, and word problems.

MATH 1730 in an *active learning class*. This means you will be directly engaged in the learning process rather than listening to lecture. The student workbook breaks each topic into a series of investigations, and we will be working through several of these investigations each day. Each investigation will proceed through four learning steps:

- *Launch* – the investigation problem is introduced and connections made to previously covered material
- *Explore* – students probe and dissect the problem and develop or identify potential solutions
- *Present* – students present potential solutions to the class
- *Discuss* – students and the instructor work with each other to identify or develop correct solutions from those presented and understand how and why they are correct

To help with this learning process, you will be assigned to small groups and will be expected to be an active participant in your group. In addition, you will engage in the "launch" and "explore" phases of a few investigations prior to coming to class to help organize your thoughts before group investigations.

Course Prerequisites:

MATH 1710 or successful completion of high school pre-calculus course.

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:

Textbook: Precalculus: Pathways to Calculus, A Problem Solving Approach, 9th edition workbook and access code. The publisher is Great River Learning. The workbook contains an access code for the online textbook. The workbook can be purchased at the campus bookstore, or other area bookstores.
Calculator: A graphing calculator is required for this course (preferably TI-83/84). Note: You may not use graphing calculators with symbolic manipulation software (DERIVE, MAPLE, etc.) on exams.

Course Purpose:

Pre-calculus is an introduction to functions in general and the specific classes of functions you encounter in the calculus sequence.

Learning Outcomes:

Content Goals:

Upon completion of this course, students will have developed:

- An understanding of graphs and how to extract information from them;
- An understanding of functions and how to manipulate them;
- An understanding of polynomial and rational functions;
- An understanding of logarithmic, exponential, and trigonometric functions;
- An understanding of basic applications of the major function families;
- An understanding of some advantages and limitations of current technology.

Process Goals:

Upon completion of this course, students will have:

- Make sense of problems and persevere in solving them.
- Reasoned abstractly (representing quantities symbolically and manipulating those symbolic representations) and quantitatively (attending to the meaning of quantities, and now just how to compute them.)
- Used appropriate tools (e.g. manipulatives, calculator) strategically to solve mathematical problems.
- Developed and extended understanding through active communication (reading, writing, speaking and listening) of mathematics, attending to precision of mathematical language.
- Constructed viable mathematical arguments and critique the reasoning of others.

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 general, you are expected to:

- Attend class and participate in discussions – both small group and whole class;
- Read and study class assignments and solve assigned problems;
- Ask questions in class when you are unsure of any concept or on any assigned problem;
- Attend the help lab or come to my office for any additional assistance as necessary;
- Take all announced quizzes and exams (including the final) on the day they are scheduled;
- Come to class prepared. This includes completing homework in a timely manner, bringing your workbook, completing assigned readings and bringing your calculator.

Course Evaluation and Grading:

We will cover the majority of Modules 1-8 in this course. The grading components for the course are as follows:

- In-class testing: There will be 4 in-class exams. All exams are closed-book and last the entire class period. Exams will count 60% of your final grade / you will drop your lowest exam grade (not the final).
- Final exam: There will be a comprehensive in-class final given on the specified final exam date. This exam will count 20% of your final grade. It is a departmental exam given to all sections of MATH 1730. No one will be exempt from the final.
- Miscellaneous: The remaining 20% of your grade will come from homework, quizzes, attendance and participation. Participation means attending class and being actively involved in your group work, group presentations and whole-class discussions. I will look for evidence of meaningful mathematical discussion and the sharing and critiquing of mathematical ideas.

Grading Scale:

Percentage	Grade
90 – 100	**A**
80 – 89	**B**
70 – 79	**C**
60 – 69	**D**
Below 60	**F**

Tentative Test Dates:

Test 1:

Test 2:

Test 3:

Test 4:
Final Exam:

Incomplete grades are given rarely and only in extenuating circumstances. Page 56 of the MTSU Undergraduate Catalog states: "The grade I indicates that the student has not completed all course requirements because of illness or other uncontrollable circumstances, especially those which occur toward the end of the term. Mere failure to make up work or turn in required work on time does not provide the basis for the grade of "I" unless extenuating circumstances noted above are present for reasons acceptable to the instructor." Please refer to the Undergraduate Catalog for the complete Incomplete Grade Policy.

Attendance and Make-up Policy:

You are expected to attend class. Attendance will be taken at the discretion of the instructor. 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 makeup exam and, depending on circumstances, the instructor has the right to not give a make-up exam.

Important Dates:

Last day to drop without a grade:
Last day to drop with a W:
Final exam time and date:

Math Tutoring Lab (MTL):

Math tutoring for this course is available as a free service to MTSU students in KOM 252. Tutoring is conducted by Graduate Teaching Assistants (GTAs), work study students, and a faculty coordinator. The lab is closed on weekends and scheduled MTSU holidays. The hours of operation are posted in the lab. More information is available at http://mtsu.edu/math/students.php#tutoring.

Academic Integrity/Misconduct:

Please review the information on Academic Integrity and Misconduct. Academic integrity is a hallmark of Middle Tennessee State University. We expect students to present original work for all academic assignments turned in for credit and appropriately credit all sources used. Academic misconduct includes, but is not limited to:

1. Plagiarism: The adoption or reproduction of ideas, words, statements, images, or works of another person as one's own without proper attribution. This includes self-plagiarism, which occurs when an author submits material or research from a previous academic exercise to satisfy the requirements of another exercise and uses it without proper citation of its reuse.
2. Cheating: Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. This includes unapproved collaboration, which occurs when a student works with others on an academic exercise without the express permission of

the professor. It also includes purchasing assignments or paying another person to complete a course for you.

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

Going online and using information without proper citation, copying parts of other students' work, creating information to establish credibility, or using someone else's thoughts or ideas without appropriate acknowledgment is academic misconduct. If you have a question about an assignment, please ask me to clarify. All cases of academic misconduct will be reported to the Director of Student Academic Ethics and may result in failure on the test/assignment or for the course.

Students guilty of academic misconduct are immediately responsible to the instructor of the class. In addition to other possible disciplinary sanctions (including suspension from the university), which may be imposed through the regular institutional procedures as a result of academic misconduct, the instructor has the authority to assign an "F" or zero for an activity or to assign an "F" for the course. Students accused of plagiarism will be immediately reported to the Director of Student Academic Ethics.

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 disrupted conduct or conduct which otherwise violates the general rules and regulations of MTSU.

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).

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.

Title IX:

Students who believe they have been harassed, discriminated against or been the victim of sexual assault, dating violence, domestic violence or stalking should contact a Title IX/Deputy Coordinator at 615-898- 2185 or 615-898-2750 for assistance or review MTSU's Title IX website for resources. MTSU faculty are concerned about the well-being and development of our students and are legally obligated to share reports of sexual assault, dating violence, domestic violence and stalking with the University's Title IX coordinator to help ensure student's safety and welfare. Please refer to MTSU's Title IX website for contact information and details.

Mental Health:

As a college student, you may experience a range of challenges and issues that can interfere with your physical and mental well-being, hinder your academic experience, and negatively impact your daily life. Some of these experiences may include overwhelming depression/sadness, anxiety, high levels of stress, use of alcohol/drugs, difficulty sleeping, difficulty concentrating, and/or loss of motivation. These challenges and issues can lead to thoughts of self-harm and suicide. If you or any of your classmates are experiencing these issues, it is important to reach out and ask for help. Discuss your situation with a friend, a family member, your instructor, or an academic advisor. Remember: Everyone struggles. It's okay to talk about it. Ask for help. YOU ARE NOT ALONE!

The True Blue Pledge:

I am True Blue

As a member of this diverse community, I am a valuable contributor to its progress and success. I am engaged in the life of this community. I am a recipient and a giver. I am a listener and a speaker. I am honest in word and deed. I am committed to reason, not violence. I am a learner now and forever. I am a BLUE RAIDER. True Blue!

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