

# MA 123 (Elementary Calculus)

**Time & Location:** click [here](#).

## Texts:

The text listed in #1 below is the official text for the course. It is very readable and has many worked out examples. The set of notes listed under #3 below is available for free online. The fourth text listed below is a good study guide for students.

1. **Calculus** by Elliot Gootman. The book is published by Barron's, and it will be the primary text for the course. The book can be purchased from the bookstores or online. We shall cover the first ten (10) chapters of this book.
2. **Supplemental Handouts and/or Lecture Notes.** (Click [here](#) to download.)
3. **A Brief Introduction to Calculus** by Robert Molzon. (Click [here](#) to download.)  
This is a set of notes that you may find useful for basic concepts. You might want to download the notes and print a copy. The initial part of the course will review algebra, and these notes should be very useful for that review.
4. **How to Ace Calculus: The Streetwise Guide** by C. Adams, J. Hass, and A. Thompson.  
This inexpensive book might be a useful guide to study methods for calculus and math in general.

## Goals:

This course will cover each of the topics from the first ten chapters of the text, *Calculus*, by Gootman. All of these topics are covered in the online homework sets. Your main goal should be to learn the material well enough so that you can use calculus in an applied context such as business or social science. It is virtually impossible to learn mathematics without actively taking part in the learning. To understand what this means, consider the impossibility of learning to play tennis by

listening to someone describe how to play tennis. You will not learn the material in this course by listening to the lectures, and thinking to yourself - "Yes, I understand that". You must work the problems and make mistakes before you will begin to learn. The instructor's task is that of an assistant to help you learn as much of the material as you desire.

In this course it will not be sufficient to memorize an algorithm for doing specific types of problems. You will be expected to understand the material well enough so that you can work problems similar to, but not identical to the ones we work in class and the ones you encounter in the homework.

**Prerequisites:**

You should have a strong understanding of college algebra and an ACT score of at least 26 or a score of 70% on the placement exam. If you have a weak algebra background it is essential that you immediately brush up on this prerequisite. Most students who do not do well in calculus, find that the required algebra is the major roadblock.

Corrections to: [corso@ms.uky.edu](mailto:corso@ms.uky.edu)

## Tentative Course Schedule - MWF Classes

Date	Description
W 1/13	Introduction/Algebra Review (Chapter 1)
F 1/15	Algebra Review (Chapter 1)
M 1/18	<i>Martin Luther King, Jr. Birthday Celebration - no class</i>
W 1/20	Rates of Change (Chapter 2)
F 1/22	Rates of Change (Chapter 2)
M 1/25	Rates of Change (Chapter 2)
W 1/27	Limits (Chapter 3)
F 1/29	Limits (Chapter 3)
M 2/1	Limits (Chapter 3)
W 2/3	Computing some Derivatives (Chapter 4)
F 2/5	Computing some Derivatives (Chapter 4)
M 2/8	Review for Exam 1
W 2/10	Review for Exam 1; EXAM 1, 5-7 pm
F 2/12	Formulas for Derivatives (Chapter 5)
M 2/15	Formulas for Derivatives (Chapter 5)
W 2/17	Formulas for Derivatives (Chapter 5)
F 2/19	Higher Derivatives (Chapter 5)
M 2/22	Exponential and Logarithmic Functions (Supplement)
W 2/24	Exponential and Logarithmic Functions (Supplement)
F 2/26	Exponential and Logarithmic Functions (Supplement)
M 3/1	Extreme Values and Mean Value Theorem (Chapter 6)
W 3/3	Extreme Values and Mean Value Theorem (Chapter 6)
F 3/5	Curve Sketching and Concavity (Chapter 6)
M 3/8	Review for Exam 2
W 3/10	Review for Exam 2; EXAM 2, 5-7 pm
F 3/12	Curve Sketching and Concavity (Chapter 6)
M 3/15	<i>Spring Break - no class</i>
W 3/17	<i>Spring Break - no class</i>
F 3/19	<i>Spring Break - no class</i>
M 3/22	Word Problems (Chapter 7)
W 3/24	Word Problems (Chapter 7)
F 3/26	Word Problems (Chapter 7)
M 3/29	The Idea of the Integral (Chapter 8)

W 3/31	The Idea of the Integral (Chapter 8)
F 4/2	The Idea of the Integral (Chapter 8)
M 4/5	Computing some Integrals (Chapter 9)
W 4/7	Computing some Integrals (Chapter 9)
F 4/9	Computing some Integrals (Chapter 9)
M 4/12	Review for Exam 3
W 4/14	Review for Exam 3; EXAM 3, 5-7 pm
F 4/16	Fundamental Theorem of Calculus; Antiderivatives (Chapter 10)
M 4/19	Fundamental Theorem of Calculus; Antiderivatives (Chapter 10)
W 4/21	Fundamental Theorem of Calculus; Antiderivatives (Chapter 10)
F 4/23	Fundamental Theorem of Calculus; Antiderivatives (Chapter 10)
M 4/26	Review for Final Exam
W 4/28	Review for Final Exam
F 4/30	Review for Final Exam
R 5/6	FINAL EXAM, 6-8 pm

## Tentative Course Schedule - TR Classes

Date	Description
R 1/14	Introduction; Algebra Review (Chapter 1)
T 1/19	Algebra Review (Chapter 1); Rates of Change (Chapter 2)
R 1/21	Rates of Change (Chapter 2)
T 1/26	Rates of Change (Chapter 2); Limits (Chapter 3)
R 1/28	Limits (Chapter 3)
T 2/2	Limits (Chapter 3); Computing Some Derivatives (Chapter 4)
R 2/4	Computing Some Derivatives (Chapter 4)
T 2/9	Review for Exam 1
W 2/10	EXAM 1, 5-7 pm
R 2/11	Formulas for Derivatives (Chapter 5)
T 2/16	Formulas for Derivatives (Chapter 5)
R 2/18	Higher Derivatives (Chapter 5)
T 2/23	Exponential and Logarithmic Functions (Supplement)
R 2/25	Exponential and Logarithmic Functions (Supplement)
T 3/2	Extreme Values and Mean Value Theorem (Chapter 6)
R 3/4	Extreme Values and Mean Value Theorem (Chapter 6)
T 3/9	Review for Exam 2
W 3/10	EXAM 2, 5-7 pm
R 3/11	Curve Sketching and Concavity (Chapter 6)
T 3/16	<i>Spring Break - no class</i>
R 3/18	<i>Spring Break - no class</i>
T 3/23	Word Problems (Chapter 7)
R 3/25	Word Problems (Chapter 7)
T 3/30	The Idea of the Integral (Chapter 8)
R 4/1	The Idea of the Integral (Chapter 8)
T 4/6	Computing some Integrals (Chapter 9)
R 4/8	Computing some Integrals (Chapter 9)
T 4/13	Review for Exam 3
W 4/14	EXAM 3, 5-7 pm
R 4/15	Fundamental Theorem of Calculus; Antiderivatives (Chapter 10)
T 4/20	Fundamental Theorem of Calculus; Antiderivatives (Chapter 10)
R 4/22	Fundamental Theorem of Calculus; Antiderivatives (Chapter 10)

T 4/27	Review for Final Exam
R 4/29	Review for Final Exam
R 5/6	FINAL EXAM, 6-8 pm

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