

Hofstra University – Department of Mathematics
Math 10E – Basic Calculus with Applications – Spring 2006
Instructor: Dr. Behailu Mammo (matbzm@hofstra.edu)
Office Phone (516–463–6022) Office: **207B** Weed Hall
Class (**Weed 208**): **MF- 10:10 – 11:35 am, W- 10:10 – 11:05 am**

WELCOME TO MATH 10E

Text: Applied Calculus, 3rd ed. by Waner and Costenoble

Office Hours: WF: 9:00 – 10:00 am; Th: 9:00 – 11:30 am. For extra hours, I will be glad to meet you by appointment.

Intended Learning Outcomes: On successful completion of the course, students will be able to

- view functions numerically, algebraically and graphically.
- distinguish and apply different types of mathematical models.
- apply some underlying principles of differential and integral calculus.
- differentiate and integrate some functions.
- develop his/her critical and analytical thinking.

Contents:

Chapter 1: Functions, Linear and Nonlinear Models

- 1.1 Introduction to Functions
- 1.2 Different Types of Functions
 - Linear Functions
 - Quadratic Functions
 - Polynomial and Rational Functions
 - Exponential Functions
 - Logarithmic Functions

Chapter 2: Limits, Continuity, and The Derivative

- 2.1 Limits: Numerical and Graphical Approaches
- 2.2 Limits and Continuity
- 2.3 Introduction to the Derivative
 - Average rate of change
 - The Derivative: Numerical, Graphical, and Algebraic Viewpoints
- 2.4 Techniques of Differentiation
 - Power Rule, The Product and Quotient Rules, and The Chain Rule.
- 2.5 Derivative of Exponential and Logarithmic Functions
- 2.6 Implicit Differentiation

Chapter 3: Applications of The Derivative

- 3.1 Curve Sketching
 - Polynomial, Rational, Exponential, and Logarithmic Functions
- 3.2 Maxima and Minima
- 3.3 Applications of Maxima and Minima
- 3.4 Related Rates

Chapter 4: The Integral

- 4.1 The Indefinite Integral
- 4.2 Substitution
- 4.3 The Definite Integral and Area Under a Curve
- 4.4 Continuous Income Streams
- 4.5 Differential Equations and Applications

Web address of the class: It is http://people.hofstra.edu/faculty/Behailu_Mammo. The teaching link lists all the courses I am currently teaching. Please click on **Math 10E** to find the course materials including announcements. In addition to solutions to some homework problems, quizzes, and tests, you will find the lecture summaries. You just need to follow the right link under your course.

Homework and Quizzes- Homework will be regularly assigned, and some will be graded. I strongly encourage you to keep up with your work and regularly do your homework. Homework problems will be posted on the *homework* link. There will also be quizzes. Please submit the homework problems on the due date.

Three tests and a final: Three tests on *February 24, March 24, and April 28*, all on Fridays. A cumulative final is on *Wednesday, May 17*. One of the tests with the lowest score will be dropped. An excused missed test is worth a **0** score and is considered your lowest test score.

Makeup: Makeup exams will only be given under substantiated extraordinary circumstances.

Grade Distributions:

- Quizzes and Homework: 25%
- Two tests: 50% – – (25% each)
- Final: 25%

Numerical-to-Letter Grade Conversion: Total scores will be scaled to 100 points and will be converted to letter grades based on the following conversions:

A : 93–100	A- : 90–92	B+ : 87–89	B : 83–86
B- : 80–82	C+ : 77–79	C : 73–76	C- : 70–72
D+ : 66–69	D : 60–65	F : 0–59	

Technology: We will occasionally use some technology during lecture. You are welcome to use any softwares which help you understand the course material better. However, usage of any electronic devices (including calculators) will be limited during exams. There will be more specific instructions during exams.

Attendance: Attendance will be conducted regularly and be used in borderline cases. Whenever a student misses class, a shared and common opportunity for learning with the instructor and classmates is forever lost. Mathematics is **ladder like**. If you miss one or more rungs, you have an extremely difficult time making it to higher rungs. Make also sure to be on time and not to leave early; coming late and/or leaving early introduces distractions.

To succeed in this course:

- be ready to spend at least five hours per week outside class exclusively for this course.
- attend class regularly and attentively. Participate during lecture.
- update your course material by regularly visiting the class site.
- master the examples discussed in class before you attempt the homework problems.
- be a part of a study group and create one if there is none. Try it, you'll like it!
- do not hesitate to see me for help.

Exam Dates:

Test I	Friday, February 24, 10:10–11:35 am
Test II	Friday, March 24, 10:10–11:35 am
Test III	Friday, April 28, 10:10–11:35 am
Final	Wednesday, May 17, 10:30–12:30 pm