

## MATH 111: Calculus I

### *Summer 2019 Course Syllabus*

**NJIT Academic Integrity Code:** All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

### COURSE INFORMATION

**Course Description:** Topics include limits, differentiation, applications of differentiation, and integration.

**Number of Credits:** 4

**Prerequisites:** MATH 110 or placement by performance on standardized entrance examinations.

**Course-Section and Instructors**

Course-Section	Instructor
Math 111-032	Professor P. Ward
Math 111-131	Professor E. Gulistan

**Office Hours for All Math Instructors:** [Summer 2019 Office Hours and Emails](#)

**Required Textbook:**

<b>Title</b>	<i>Thomas' Calculus: Early Transcendentals</i>
<b>Author</b>	Thomas
<b>Edition</b>	14th
<b>Publisher</b>	Pearson
<b>ISBN #</b>	ISBN
<b>Notes</b>	978-0134768496 (bound) 9780134768762 (looseleaf)

**Withdrawal Date:** Please see the [Summer 2019 Academic Calendar](#) for the last day to withdraw based on the summer session you are registered for.

### COURSE GOALS

**Course Objectives**

- Students should (a) learn about limits and their central role in calculus, (b) learn about derivatives and their relationship to instantaneous rates of change, (c) understand many practical applications of derivatives, (d) gain experience in the use of approximation in studying mathematical and scientific problems, (e) learn about integrals: their origin in the area problem and their relationship to derivatives.
- Students should gain an appreciation for the importance of calculus in scientific, engineering, computer, and other applications.
- Students should gain experience in the use of technology to facilitate visualization and problem solving.

### Course Outcomes

- Students have improved logical thinking and problem-solving skills.
- Students have a greater understanding of the importance of calculus in science and technology.
- Students are prepared for further study in mathematics as well as science, engineering, computing, and other areas.

**Course Assessment:** The assessment of objectives is achieved through homeworks, quizzes, and common examinations with common grading.

## POLICIES

**DMS Course Policies:** All DMS students must familiarize themselves with, and adhere to, the **Department of Mathematical Sciences Course Policies**, in addition to official **university-wide policies**. DMS takes these policies very seriously and enforces them strictly.

**Grading Policy:** The final grade in this course will be determined as follows:

Homework	10%
Quizzes	10%
Common Midterm Exam I	25%
Common Midterm Exam II	25%
Final Exam	30%

Your final letter grade will be based on the following tentative curve.

A	88 - 100	C	65 - 71
B+	83- 87	D	60 - 64
B	77 - 82	F	0 - 59
C+	72 - 76		

**Attendance Policy:** Attendance at all classes will be recorded and is **mandatory**. Please make sure you read and fully understand the **Math Department's Attendance Policy**. This policy will be strictly enforced.

**Homework Policy:** Calculus is learned by solving problems. In Math 111, there are two kinds of homework assignments: 1) assignments which are written out by hand and turned in, and 2) assignments which are completed online. The homework assignments are listed on the syllabus; the \* superscript denotes those problems which constitute the hand-in assignments while the remaining problems constitute the online assignments.

The online assignments can be completed at **WWW.MYMATHLAB.COM** or **WWW.COURSECOMPASS.COM** . In order access the online assignments you need to have a student access code. Access codes are included with new book that is bundled with MyMathLab; codes can be purchased separately from the textbook at the campus bookstore or online at the course website. If you buy a new book from another source **make sure it is bundled with MyMathLab**. In addition, on the first day of class your course instructor will give you an additional code

needed to access the online assignments. **NOTE: Homework Assignments are DUE frequently (at least weekly) at the dates and times specified online and by your instructor.**

How to Get Started with MyMathLab:

- **GETTING STARTED**
- **TECHNOLOGY TIPS**

**MATLAB Assignments:** MATLAB is a mathematical software program that is used throughout the science and engineering curricula. One MATLAB assignment will be given during the semester.

**Quiz Policy:** Quizzes are given in class on a frequent basis (at least weekly). All of the quizzes will be graded. The homework and quizzes are intended to develop your problem-solving skills and to help you prepare for the exams.

**Exams:** There will be two common midterm exams held during the semester and one comprehensive common final exam. Exams are held on the following days:

Common Midterm Exam I	June 12, 2019
Common Midterm Exam II	July 17, 2019
Final Exam	August 5, 2019

**Makeup Exam Policy:** To properly report your absence from a midterm or final exam, please review and follow the required steps under the DMS Examination Policy found here:

- [http://math.njit.edu/students/policies\\_exam.php](http://math.njit.edu/students/policies_exam.php)

The time of the midterm exams will be determined by the instructor and/or the Math Department. The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the **Math Department's Examination Policy**. This policy will be strictly enforced.

**Cellular Phones:** All cellular phones and other electronic devices must be switched off during all class times.

---

## **ADDITIONAL RESOURCES**

**Math Tutoring Center:** Located in the Central King Building, Room G11 (Summer Hours: TBA)

**Accommodation of Disabilities:** Disability Support Services (DSS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT. If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director of Disability Support Services at **973-596-5417** or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is located in Fenster Hall Room 260. For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Disability Support Services (DSS) website at:

- <http://www5.njit.edu/studentssuccess/disability-support-services/>

**Important Dates** (See: **Summer 2019 Academic Calendar, Registrar**)

<b>Date</b>	<b>Event</b>
May 20, 2019	First Day of Classes
May 21, 2019	Last Day to Add/Drop Classes for <b>FIRST, MIDDLE, AND FULL</b>
May 27, 2019	University Closed for Memorial Day
June 24, 2019	Last Day of <b>FIRST SUMMER SESSION</b>
July 1, 2019	First Day of Second Summer Session

July 4-5, 2019	University Closed for Independence Day
July 15, 2019	Last Day of <b>MIDDLE SUMMER SESSION</b>
August 6, 2019	Last Day of <b>FULL AND SECOND SUMMER SESSIONS</b>

## Course Outline

Section #	
2.1:	Rates of Change and Tangents to Curves
2.2	Limit of a Function and Limit Laws
2.4:	One-Sided Limits
	Memorial Day Holiday - School Closed
2.5	Continuity
2.6:	Limits Involving Infinity; Asymptotes of Graphs
3.1:	Tangents and the Derivative at a Point
3.2:	The Derivative as a Function
3.3:	Differentiation Rules
3.4:	The Derivative as a Rate of Change
3.5:	Derivatives of Trigonometric Functions
3.6:	The Chain Rule
3.7:	Implicit Differentiation
	REVIEW FOR MIDTERM EXAM I
	<b>MIDTERM EXAM I: WEDNESDAY, JUNE 12</b>
3.8:	Derivatives of Inverse Functions and Logarithms
3.9:	Inverse Trigonometric Functions
3.10:	Related Rates
3.1	Linearization and Differentials
4.1:	Extreme Values of Function
4.2:	The Mean Value Theorem
	<b>JULY 4 HOLIDAY - SCHOOL CLOSED</b>
4.2:	The Mean Value Theorem (Cont'd)
4.3:	Monotone Functions and the First Derivative Test
4.4:	Concavity and Curve Sketching
4.5:	Indeterminate Forms and L'Hopital's Rule
4.6:	Applied Optimization
4.7:	Newton's Method
	REVIEW FOR MIDTERM EXAM II
	<b>MIDTERM EXAM II: WEDNESDAY, JULY 17</b>

4.8:	Antiderivatives
5.1:	Area and Estimating with Finite Sums
5.2:	Sigma Notation and Limits of Finite Sums
5.3:	The Definite Integral
5.4:	The Fundamental Theorem of Calculus
5.5:	Indefinite Integrals and the Substitution Method
5.6	Substitution and Area Between Curves
»	Catch Up and Review
<b>FINAL EXAM: AUGUST 5, 2019</b>	

*Updated by Professor Pete Ward - 5/15/2019  
Department of Mathematical Sciences Course Syllabus, Summer 2019*

---