Instructor: Dr. Andrew Koichi Greene

Office: RLC 201.J

E-mail: andrew.greene@manhattan.edu

Office Hours: M, Th 10:00–11:00; W 2:30–3:30; F 9:00–10:00; and by Appointment

Course Description: A study of limits, derivatives, continuity, differentiation and an introduction to the definite integral. This class meets four times per week. Most meetings are in a classroom setting; some meetings may take place in a computer lab, where the computer algebra system Maple will be used to enhance and supplement the classroom material. Course announcements and resources will be regularly posted on Moodle, [https://lms.manhattan.edu](https://lms.manhattan.edu).

Prerequisites: A satisfactory score on the mathematics placement exam or Math 100: Pre-Calculus.


Class Participation: Attendance is mandatory. Four or more unexcused absences must be reported to the dean of your school. I expect you to come to class prepared. Review your notes, write down questions you have and then ask them in class, or if you prefer, during office hours. Complete the assigned homework. Your individual participation in the classroom is an essential part of the learning dynamic for everyone.

Grading:

- Homework: 10%
- Labs and Quizzes: 10%
- Midterm Exams: 60%
- Final Exam: 20%

Notes: Midterm grades are due Tuesday, October 15. They will not appear on your transcript. The last day to withdraw from a course with a “W” is Friday, October 25.

Homework: Homework will be assigned regularly. Homework is to be submitted on MyMathLab which can be found at [http://www.mymathlab.com/](http://www.mymathlab.com/) Special instructions for accessing MyMathLab are attached at the end of this syllabus. It is important to keep up with these assignments in order to be successful in this class. Your lowest five homework grades will be dropped at the end of the semester.

Exams: There will be three in-class midterm exams. The first exam will cover the material we learn from chapters 1 and 2. Exam 2 will cover the material we learn from chapter 3. Exam 3 will
cover the material we learn from chapter 4. Each of the exams will be weighted evenly toward your “Midterm Exams” grade (i.e., each exam is worth 20% of your final grade). The final exam will be cumulative. Its date and location will be announced later. Mobile phones, any device capable of connecting to the internet, and any device capable of transmitting messages will not be permitted for use during exams. Students are not permitted to leave the exam room during an exam.

**Labs and Quizzes:** There will be either a lab or a quiz every week. You will be expected to use the computer algebra system Maple for the labs. The quizzes will consist of questions that are very similar to certain assigned homework problems. Each lab and quiz will be weighted evenly toward your “Labs and Quizzes” grade. The lowest of your labs and quizzes will be dropped.

**Extra Help:** It is imperative that you seek extra help as soon as possible if you need it. You can always come to my office hours, however, please do not feel restricted to those times. If you see that I’m in my office, feel free to stop by and ask questions. You can also set up an appointment with me outside of scheduled office hours. There is also tutoring offered by Pi Mu Epsilon, a math honor society; you can find the schedule posted on the wall in the Math and Department Office in RLC 201. The Center for Academic Success is conducting tutoring for students in Math 186 in the Spring 2013 semester in Leo 117 and DLS 206. Their hours are Monday-Thursday 10AM-7PM and Friday 10AM-5PM. Further details can be found at [http://www.manhattan.edu/academics/center-academic-success](http://www.manhattan.edu/academics/center-academic-success).

**Make-Up Policy:** No make-ups will be granted unless in the case of an emergency. In such cases you need to notify me (the instructor) and provide proper documentation detailing the emergency in order to receive permission to have a make-up.

**Special Accommodations:** Please notify me as soon as possible if you have commitments as an athlete or other special needs.

**Calculators:** A graphing calculator without symbolic algebra capabilities may be used on exams. However, the use of a symbolic calculator such as the TI-89 or TI-92 will not be allowed. I reserve the right to check your calculator’s memory to look for anything that should not be there.

**Academic Integrity:** Recall that as students of Manhattan College, you have each signed The Manhattan College Honor Pledge as a part of the Honor Code:

> As a Manhattan College student, I will not lie, cheat, or steal in my academic endeavors, nor will I accept the actions of those who do. I will conduct myself responsibly and honorably in all my activities as a Manhattan College student. I am accountable to the Manhattan College community and dedicate myself to a life of honor.

Whenever you put your name on work to be handed in for grading in this class, you are reaffirming the above pledge—you are certifying that the work is your own, and that you have not violated the Honor Code in any way while doing the work. Students who violate the Honor Code are subject to various sanctions, including suspension or expulsion from Manhattan College. Violations of the Honor Code include, but are not limited to, cheating, plagiarism, fabrication, and other forms of academic misconduct. Please see the Manhattan College Community Standards, pp 45-47, for specific examples of the above.
Course Learning Outcomes: By the conclusion of the course, the student will be able to:

- Articulate an understanding of the concept of a limit
- Compute limits of algebraic and trigonometric functions
- Calculate derivatives using limits.
- Differentiate algebraic, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions.
- Interpret the derivative analytically and geometrically
- Solve various applied problems, including related rates, curve sketching, approximation and optimization using derivatives.
- Calculate antiderivatives yielding certain algebraic, rational, exponential, logarithmic, trigonometric and inverse trigonometric functions.
- Articulate an understanding of the definition of the definite integral.
- Interpret the definite integral analytically and geometrically.
- Demonstrate an understanding of the Fundamental Theorem of Calculus
- Solve basic area problems using definite integrals
- Present results of problems in a clear and logical manner in completing assignments from the Maple labs, text and exam questions

Topics:

- Chapter 1 and Appendix A: Preparation for Calculus
  - 1.1 Review of Functions
  - 1.2 Representing Functions
  - Appendix A Algebra Review

- Limits
  - 2.1 The idea of limits
  - 2.2 Definitions of limits
  - 2.3 Techniques for computing limits
  - 2.4 Infinite limits
  - 2.5 Limits at infinity
  - 2.6 Continuity
  - 2.7 Precise definitions of limits

- Derivatives
- 3.1 Introducing the derivative
- 3.2 Rules of differentiation
- 3.3 The product and quotient rules
- 3.4 Derivatives of trigonometric functions
- 3.5 Derivatives as rates of change
- 3.6 The Chain Rule
- 3.7 Implicit differentiation
- 3.8 Derivatives of logarithmic and exponential functions. (See section 1.3 for review.)
- 3.9 Derivatives of inverse trigonometric functions. (See section 1.4 for review.)
- 3.10 Related rates

- **Applications of the Derivative**
  - 4.1 Maxima and minima
  - 4.2 What derivatives tell us
  - 4.3 Graphing functions
  - 4.4 Optimization problems
  - 4.5 Linear approximation and differentials
  - 4.6 Mean Value Theorem
  - 4.7 L'Hôpital's Rule
  - 4.8 Newton's Method
  - 4.9 Antiderivatives

- **Integration**
  - 5.1 Approximating areas under curves
  - 5.2 Definite integrals
  - 5.3 Fundamental Theorem of Calculus

Good Luck!
To register for Math 185 Calculus I 2013 Fall:

2. Under Register, click Student.
3. Enter your instructor’s course ID: greene17465, and click Continue.
4. Sign in with an existing Pearson account or create an account:
   - If you have used a Pearson website (for example, MyITLab, Mastering, MyMathLab, or MyPsychLab), enter your Pearson username and password. Click Sign in.
   - If you do not have a Pearson account, click Create. Write down your new Pearson username and password to help you remember them.
5. Select an option to access your instructor’s online course:
   - Use the access code that came with your textbook or that you purchased separately from the bookstore.
   - Buy access using a credit card or PayPal.
   - If available, get 14 days of temporary access. (Look for a link near the bottom of the page.)
6. Click Go To Your Course on the Confirmation page. Under MyLab & Mastering New Design on the left, click Math 185 Calculus I 2013 Fall to start your work.

Retaking or continuing a course?
If you are retaking this course or enrolling in another course with the same book, be sure to use your existing Pearson username and password. You will not need to pay again.

To sign in later:
2. Click Sign in.
3. Enter your Pearson account username and password. Click Sign in.
4. Under MyLab & Mastering New Design on the left, click Math 185 Calculus I 2013 Fall to start your work.

Additional Information
See Students > Get Started on the website for detailed instructions on registering with an access code, credit card, PayPal, or temporary access.