

Manhattan College

Department of Mathematics

MATH 285 Section 05

Calculus III

Fall 2018

<i>Class Time:</i>	M	12-1:15 P.M.	<i>Class Room:</i>	RLC 105
	W	1-1:50 P.M.	<i>Class Room:</i>	Leo 214
	R	12-1:15 P.M.	<i>Class Room:</i>	Leo 235

<i>Instructor:</i> Angel R. Pineda, Ph.D.	<i>Office:</i> RLC 201B
<i>Email:</i> angel.pineda@manhattan.edu	<i>Phone:</i> 718-862-7730
<i>Website:</i> https://turing.manhattan.edu/~apineda01/	

Office Hours: Monday 1:30-2:20 P.M., Wednesday 3-3:50 P.M., Thursday 11:00-11:50 A.M., or by appointment.

Textbook: Calculus for Scientists and Engineers: Early Transcendentals, by Briggs, Cochran, and Gillett, Pearson 2013.

Required Technology: MyMathLab Access (for Online HW, Course ID: pineda87521)

Recommended Technology: Maple

Catalog Course Description:

3 Credits (Meets four hours per week). Algebraic and geometric aspects of vectors, functions of several variables, partial derivatives, multiple integrals, vector calculus, line integrals, Green's Theorem.

Prerequisite: A grade of C or better in Calculus II (MATH 156, MATH 186, or MATH 188).

Attendance: Attendance is mandatory. Four or more unexcused absences will be reported to the dean of your school. If you are late, please notify the instructor at the end of the class.

Learning Outcomes: Upon successful completion of this course, the student will be able to:

- Perform basic vector algebra and interpret the results geometrically.
- Find the equations of lines and planes in 3-dimensional space.
- Recognize the basic quadric surfaces.
- Compute and interpret the partial derivatives of a function of several variables.
- Solve optimization and approximation problems in higher dimensions.
- Compute multiple integrals using rectangular, cylindrical, and spherical coordinates.
- Use a multiple integral to represent the volume of a solid region.
- Differentiate and integrate a vector-valued function.
- Compute the line integral of a vector field or a scalar line integral.
- Apply the Fundamental Theorem for Line Integrals and Green's Theorem.

Course Homepage (Moodle):

Here you will find four features that will be used in this course:

- *Email:* make sure that your email on Moodle is one that you check regularly. Homework assignments, announcements and other class related information will be sent via email.

- *Course Information and Documents:* material covered each week, assignments and solution keys.
- *Student Discussion Board:* this online forum allows for students and faculty to communicate about the course.
- *Grades:* students will be able to keep track of their grades online.

Assessment of Student Learning:

Homework (10%)

Homework will be done online using MyMathLab. Note that if you purchased access in a previous semester, you do not need to pay again. Use the same username and password that you used in the past. This type of homework allows you to get instant feedback on your work and provides similar examples to the assigned problems. The key is to use these problems to learn the mathematical methods so that you can do well on the quizzes and exams.

In-class Worksheets, Quizzes and Labs (10%)

We will have in-class group work, regular quizzes and labs using Maple. These different ways of exploring the material will help you understand the material by working in groups, by solving simple problems in quizzes and by using technology to solve problems that are difficult to do by hand.

Midterm Exams: (60%)

Exam I	Exam II	Exam III	Exam IV
Thursday September 20	Thursday October 11	Thursday November 1	Thursday November 29

Common Comprehensive Final Exam (20%), sometime from December 10 to 15, 2018. Once the final exam time is determined, it will be shared with the students. Before that time, do not make travel plans before December 16, 2018.

Tentative Grading Scale

Percent	93-100	90-92	87-89	83-86	80-82	77-79	70-76	67-69	60-66	0-59
Grade	A	A-	B+	B	B-	C+	C	D+	D	F

The exact grading scale will be determined after the final exam. The numerical scores in the tentative grading scale guarantee the associated letter grade but the instructor may change the scale to the student's benefit.

Dates to Remember:

August 31: Late Registration & Add/Drop Ends
 September 3: Labor Day – No Classes
 September 20: Exam I
 October 8: Fall Break – No Classes
 October 9: Monday Schedule
 October 11: Exam II
 October 15: Midterm Grades Due
 November 1: Exam III
 November 16: Last Day to Withdraw from Courses
 November 21-23: Thanksgiving Holiday – No Classes
 November 29: Exam IV
 December 7: Last Day of Classes
 December 10-15: Final Exam Period

Class Policies

- Late worksheets and labs will not be accepted after the solutions are distributed. In case assignments are handed in before the solutions are posted it will be marked 20% off for every day (or part thereof) it is late.
- Failure to attend class on a day of a quiz will result in a zero grade for that quiz unless it is an excused absence with a documented reason.
- The lowest worksheet, quiz or lab grade will be dropped.
- No make-up exams will be given, unless you have a medical or family emergency. These emergencies require valid documentation. The grade for a missed exam is zero.
- Cell phones (or other technology not related to the class) in the classroom is only allowed with express permission of the instructor for special circumstances. In general cell phone or other potentially disruptive technology use is not allowed in class.
- No food or drink is allowed in labs.

Electronic Devices Policy

A graphing calculator without symbolic algebra capabilities may be used. However, the use of symbolic calculators including, but not limited to the TI-89, TI-92, or TI-NSPIRE CAS, will not be allowed. Your instructor reserves the right to check your calculator's memory to look for anything that should not be there. No other electronic devices, including cell phones, may be used for any reason during a quiz or exam. If you must use the restroom during an exam, you must place all electronic devices on your desk while you are gone.

Suggestions for Success

- The course requires a time commitment of about 8-12 hours outside of class time per week (2-3 per class hour). The material builds on itself, so it is very important not to fall behind.
- Find a study partner or group.
- Treat your homework, quizzes, and labs as a study guide for future exams. Write solutions to problems in a neat and organized fashion.
- Review your notes from the previous lecture before each class.
- Read the textbook. It will complement the presentation in lecture and help give you the big picture of the material.
- I encourage you to come to office hours regularly. I will do my best to help you.

Center for Academic Success

It provides student-centered programs and initiatives designed to enhance the learning experience of all students. The CAS provides one-on-one and small group tutoring in a wide range of subjects, including all core courses at the Writing Center, Learning Center and Leo Learning Center (Leo 117/118). The CAS also provides academic coaching, workshops, supplemental instruction and online tutoring. All of the services are free for students.

Students can now book CAS appointments online by following these steps:

1. Go to <https://manhattan.mywconline.com/>
2. New user? Click "Register for an account" and enter required information. When prompted to enter your email address, be sure to use your manhattan.edu student email.
3. Start searching and booking tutoring, writing center, and peer academic coaching appointments!

Appointments are preferred, but drop-ins are permitted. If you have any questions, please contact the CAS at 718.862.7414, email success@manhattan.edu, or stop by Thomas Hall 3.10 (or Leo 117/118). For more information, visit the CAS website at <https://inside.manhattan.edu/academic-resources/center-for-academic-success/>

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. 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 Code of Conduct and Academic Policies for a detailed description: <https://inside.manhattan.edu/student-life/dean-of-students/code-conduct.php>

Special Accommodations:

- Students with special needs should bring appropriate documentation to the Specialized Resource Center, Thomas Hall 3.15, <https://inside.manhattan.edu/academic-resources/specialized-resource-center/>, to obtain an Academic Adjustment/Auxiliary Aid form. Bring the completed form to me as soon as possible, and together we will decide on how best to fulfill the adjustments and/or aids listed on the form.
- Student athletes should bring their event schedules to me as soon as possible.

Course Outline:

- Chapter 12: Vectors and Vector-Valued Functions
 - 12.1 Vectors in the Plane
 - 12.2 Vectors in Three Dimensions
 - 12.3 Dot Products
 - 12.4 Cross Products
 - 12.5 Lines in Space
- Chapter 13: Functions of Several Variables
 - 13.1 Planes and Surfaces
 - 13.2 Graphs and Level Curves
 - 13.3 Limits and Continuity
 - 13.4 Partial Derivatives
 - 13.5 The Chain Rule
 - 13.6 Directional Derivatives and the Gradient
 - 13.7 Tangent Planes and Linear Approximation
 - 13.8 Maximum/Minimum Problems
 - 13.9 Lagrange Multipliers
- Chapter 14: Multiple Integration
 - 14.1 Double Integrals over Rectangular Regions

- 14.2 Double Integrals over General Regions
- 11.2 Polar Coordinates
- 14.3 Double Integrals in Polar Coordinates
- 14.4 Triple Integrals
- 14.5 Triple Integrals in Cylindrical and Spherical Coordinates
- Chapter 12: Vectors and Vector-Valued Functions
- 12.5 Curves in Space
- 12.6 Calculus of Vector-Valued Functions
- 12.8 Length of Curves
- Chapter 15: Vector Calculus
- 15.1 Vector Fields
- 15.2 Line Integrals
- 15.3 Conservative Vector Fields
- 15.4 Green's Theorem

The material in this syllabus may be changed at the instructor's discretion. Any changes will be communicated to the students.