Manhattan College
Department of Mathematics, Kakos School of Science

MATH 285 Section 02   *Calculus III*   Fall 2023

Class Time: TF   11:00 am -12:15 pm   *Class Room*: Leo 256
             W   11:00 am -11:50 am   *Class Room: RLC 102*

Instructor: Angel R. Pineda, Ph.D.   *Office*: RLC 201H
Email: angel.pineda@manhattan.edu   *Phone*: 718-862-7730
Website: https://angel-r-pineda.github.io/index

Office Hours: Tuesday 10:00-10:50 am, Wednesday 1-1:50 pm, Friday 12:30-1:20 pm, or by appointment.

Textbook: Calculus: Early Transcendentals, 3rd Ed, by Briggs, Cochran, Gillett, and Schulz, Pearson 2019.

Required Technology: MyLab Access (for Online HW, Course ID: pineda20559, included with purchase of text for previous calculus courses)
https://www.pearson.com/mylab

Required Technology: MATLAB (available for free through Manhattan College Site License)
https://www.mathworks.com/academia/tah-portal/manhattan-college-40634592.html

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).

Student Learning Outcomes: Upon successful completion of this course, the student will be able to:
- Use and interpret vector operations in 2 and 3 dimensions.
- Find the equations of lines and planes in 3-dimensional space.
- Recognize the basic quadric surfaces.
- Understand and work with functions of several variables.
- Use partial derivatives to find directional derivatives and gradients.
- Solve optimization and approximation problems in higher dimensions.
- Calculate and apply double integrals in rectangular and polar coordinates.
- Use triple integrals in rectangular, cylindrical, and spherical coordinates.
- Differentiate and integrate vector-valued functions
- Parameterize curves and evaluate line integrals.
- Understand and apply 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.
- *Course Information and Documents:* material covered each week, assignments, practice problems and solution keys.

- *Student Discussion Board:* this online forum allows for students and faculty to communicate about the course. It is like an online study group.
- *Grades:* students will be able to keep track of their grades online.

Assessment of Student Learning:
Homework (10%)
Homework with be done online using MyLab. 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.

Class Work, Quizzes and Labs (10%)
We will have class work, regular quizzes and labs using MATLAB. These different ways of exploring the material will help you understand the material by working in class, by solving simple problems in quizzes and by using technology to solve problems that are difficult to do by hand.

Midterm Exams: (60%, 15% each)

Exam 1	Friday, Sept. 22
Exam 2	Friday, Oct. 13
Exam 3	Friday, Nov. 3
Exam 4	Friday, Dec. 1

Common Comprehensive Final Exam (20%), Thursday December 14, 4-6 pm, Smith Auditorium

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 instructor may change the scale to the student's benefit.

Dates to Remember:
      August 28: First Day of Classes
      September 1: Late Registration & Add/Drop Ends
      September 4: Labor Day – No Classes
      September 22: Exam 1
      October 9: Fall Break – No Classes
      October 10: Monday Schedule
      October 13: Exam 2
      October 17: Midterm Grades Due
      November 3: Exam 3
      November 17: Last Day to Withdraw from Full Term Courses
      November 22-24: Thanksgiving Holiday – No Classes
      December 1: Exam 4
      December 8: Last Day of Classes
      December 14: Final Exam

Class Policies
- **Attendance:** The official College Attendance Policy, as published in the College Catalog, is: "Students are required to fulfill all course requirements as detailed in the course syllabi for their registered courses. Implicit in these requirements is completion of all course assignments and attendance in all classes. A student who is absent from class cannot expect the course instructor to provide notes or allow makeup tests, quizzes, or laboratories. The student may incur an appropriate grading penalty for such absences if the penalty was described in the syllabus. Reasonable accommodations for absences are recommended, but are solely at the discretion of the course instructor. If the instructor believes that a student's failure to attend class is substantially affecting the student's course grade, then the instructor is strongly encouraged to report the situation to the dean of the school in which the student is matriculated. It is recommended that the dean be contacted by the course instructor after the student incurs four hours of absences in a course. The dean will address the situation with the student."
- **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.
- **Late Work**: 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.
- **Missing Quizzes or Exams:** Failure to attend class on a day of a quiz or exam will result in a zero grade unless it is an excused absence with a documented reason. No make-up exams will be given, unless you have a medical or family emergency.
- **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.

Suggestions for Success
- The course requires a time commitment of about 8 hours outside of class time per week (2 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 so that you can study from them.
- Read the textbook and look at the videos from 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.

Student Academic Success Services | Center for Academic Success
The Center for Academic Success (CAS) is committed to providing student-centered programs and initiatives designed to enhance learning and promote success and persistence for all Manhattan College students. Students will work collaboratively with qualified peers and professionals to develop knowledge, skills and strategies needed for success in the classroom and beyond. The CAS has two locations: The Learning Commons in Thomas Hall 3.10 and the Leo Learning Center in Leo 117/118. Services include online and in-person individual tutoring, online small group peer tutoring (select courses), student academic success coaching, and online and in-person writing center services. All services are free of charge and available to all Manhattan College students. Appointments are preferred but walk-ins are welcome. To make an appointment, students can log into their Jasper Connect account or visit the CAS

in Thomas Hall, 3.10. Students can also contact success@manhattan.edu with any questions. For more information about these services please visit the CAS webpage.

College Academic Integrity Policy
When placed on your exams and assignments, your name verifies that the work is your own. All written work must conform to Standard English usage. Failure to meet such standards will affect your grade.

All Manhattan College students are expected to maintain the highest standards of academic and personal integrity. Any violations of academic integrity such as exam cheating, facilitation of dishonesty, plagiarism (i.e. copying from any source (classmates, published sources, Internet) for an assignment, etc.,) will be dealt with in accordance with the student handbook of Manhattan College and will result in disciplinary penalties as described below.

The Manhattan College Academic Integrity Policy was developed for clarity and fairness so it is understood and applied correctly by students and faculty members. The policy was established because academic success must be based on accomplishment and not dishonesty. The policy requires faculty members to report all violations. Four levels of violations can be assigned: Warnings, which require mandatory participation in academic integrity tutorials, and One-, Two-, and Four-Point Violations, which carry points and increasingly serious sanctions. Significantly, the points accumulate in determining sanctions; for example, a second One-Point Violation receives the sanctions of a Two-Point Violation. Accumulation of four or more points by any combination of violations will result in dismissal from Manhattan College.

For more information on the policy, please use the following link: https://inside.manhattan.edu/student-life/dean-of-students/code-conduct.php#academicintegrity

Policy on Students with Disabilities
Students with Disabilities should contact the Specialized Resource Center with their appropriate documentation, to obtain an "Academic Adjustment/Auxiliary Aid" form. When the student presents this completed form to the professor, the professor will then confer with the student on the fulfillment of the adjustments/aids listed on the form.

Title IX Statement
In accordance with Title IX of the Education Amendments of 1972 that prohibits gender-based discrimination in educational settings that receive federal funds, Manhattan College is committed to providing an environment not impaired by sex and gender-based misconduct, including sex discrimination and sexual harassment. For purposes of Title IX reporting, I am considered a "mandated reporter" at Manhattan College. That means I must share information related to situations involving sexual assault, sexual harassment, domestic violence, dating violence, stalking, and/or retaliation with the Title IX Coordinator. Information for resources, policies, and how to file a formal report can be found at: https://inside.manhattan.edu/offices/diversity-equity-title-ix/title-ix-sexual-harassment.php#resources

Technological Assistance
For a list of all Manhattan College Information Technology Services see
https://inside.manhattan.edu/offices/its/index.php

For live assistance with a technological concern, contact the ITS Helpdesk at 718-862-7973 or create a help desk ticket at its@manhattan.edu

Self-Care
Your academic success in this course and throughout your college career depends heavily on your personal health and well-being. Stress is a common part of the college experience, and it often can be compounded by unexpected life changes outside the classroom. The Manhattan Community strongly encourages you to take care of yourself throughout the term, before the demands of midterms and finals reach their peak. Please feel free to talk with me about any difficulty you may be having that may impact your performance in this course as soon as it occurs and before it becomes unmanageable. Please know there are a number of other support services on campus that stand ready to assist you. I strongly encourage you to contact them when needed (refer to the table below for offices and their contact information).

Helpful Contacts

Michelle Deale – **Academic Advisor & Assistant Dean KSOS** – Hayden Hall 304	718-862-7814
Financial Aid – Thomas Hall 3rd Fl	718-862-7100
Student Accounts/Bursar – Miguel 100	718-862-7961
Counseling Center - Miguel 501	718-862-7394
Manhattan College Dean of Students Office - Thomas Hall 5th Fl	718-862-7438
Health Care Services - Alumni Hall 104	718-862-7217
Residence Life - Thomas Hall 502	718-862-7438
Office of Student Engagement – Kelly Commons 4.08	718-862-7247
Office of Multicultural Affairs – Kelly Commons 3.03	718-862-8112
Sexual Assault Prevention & Education – Kelly Commons 3.04	718-862-7512
Center for Academic Success – Thomas Hall 3.10 or Leo 117/118	718-862-7414or718-862-7476
Opportunity Programs (CSTEP, HEOP, S@M) - Thomas Hall 3.10	718-862-7101
Study Abroad - Thomas Hall 3.32	718-862-7527
International Student & Scholar Services – Kelly 3.02A	718-862-7213
School of Liberal Arts - Miguel Hall 210	718-862-7956
School of Engineering – Leo Hall 201	718-862-7282
School of Education & Health – Miguel Hall 205	718-862-7291
O'Malley School of Business – De La Salle Hall 201	718-862-7439
School of Continuing & Professional Studies-Miguel 301	718-862-7870

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The material in this syllabus may be changed at the instructor's discretion. Any changes will be communicated to the students. During these challenging times, we need to be particularly flexible.

Course Content:

Chapter 13: Vectors and the Geometry of Space
13.1 Vectors in the plane
13.2 Vectors in three dimensions
13.3 Dot products
13.4 Cross products
13.5 Lines and planes in space
13.6 Cylinders and quadric surfaces

Chapter 15: Functions of Several Variables
15.1 Graphs and level curves
15.2 Limits and continuity
15.3 Partial derivatives
15.4 The chain rule
15.5 Directional derivatives and the gradient
15.6 Tangent planes and linear approximation
15.7 Maximum/minimum problems
15.8 Lagrange multipliers (Time permitting)

Chapter 16: Multiple Integration
16.1 Double integrals over rectangular regions
16.2 Double integrals over general regions
12.2 Polar Coordinates
16.3 Double integrals in polar coordinates
16.4 Triple integrals
16.5 Triple integrals in cylindrical and spherical coordinates

Chapter 14: Vector-Valued Functions
14.1 Vector-valued functions
14.2 Calculus of Vector Valued Functions
14.4 Length of curves

Chapter 17: Vector Calculus
17.1 Vector fields
17.2 Line integrals
17.3 Conservative vector fields
17.4 Green's Theorem
17.5 Divergence and Curl (Time Permitting)
17.6 Surface Integrals (Time Permitting)
17.7 Stokes' Theorem (Time Permitting)
17.8 Divergence Theorem (Time Permitting)