MATH 213 Analytic Geometry and Calculus III
Section 007, Fall 2020

Instructor: Gary dela Pena, Ph.D.

Contact Information:

- **Email**: gdelape2@gmu.edu (Subject line must contain: MATH 213-007)
- **Office Hours**: 4:00P-5:00P MW on Blackboard Collaborate Ultra (login at these times if you want to ask questions)
- **Discussion Board**: You can ask questions using the discussion board in Blackboard.

Prerequisites: C or better in MATH 114 or equivalent.

Course Objectives: MATH 213 is primarily for students in mathematics, engineering the sciences and other areas requiring strong mathematical backgrounds. The purpose is to give students a basic understanding of the concepts of calculus of several variables, a basic understanding of vector valued functions, partial derivatives, multiple integrals and topics from the calculus of vectors.

Textbook: Thomas, G.B. *Calculus Early Transcendentals*, 14th Edition, Pearson Publishing, 2018.

MYMATHLAB ACCESS CODE IS NOT REQUIRED

Grading : Your grade will be determined out of a possible 320 points:

Midterm Test (2)	160 points (80 points per test)
Final exam (1)	125 points
Worksheets (7)	35 points (5 points per worksheet)
Total	320 points

Grades will be assigned according to the following scale:

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

Tests: (2) midterm tests and a final Test. The coverage for each test is specified in the course schedule.

Although the course is offered online asynchronously, all tests are given on specific days, during a designated time period. If you are unable to take the exam at that time, you may request an alternate exam day and time, to be approved by the instructor. All requests for alternate days/times must be made two weeks before the scheduled test date.

- Midterm Test 1: September 30, 7:20P - 8:35P
- Midterm Test 2: November 11, 7:20P-8:35P
- Final Test: December 9, 7:30P-10:15P

These are the only dates and times that you are required to be in attendance. Please read the "Course Procedures and Guidelines" on how the tests will be administered and submitted. The coverage for rach test is indicated in the course schedule. A test review will be posted one week before the scheduled date in blackboard. I will inform you when is it posted.

Worksheets: There will be a total of ten (10) worksheets. Please read the "Course Procedures and Guidelines" on how the worksheets are administered and submitted. The posting and due dates of each worksheet is indicated in the course schedule. THERE IS NO MAKE-UP FOR WORKSHEETS. The three (3) lowest worksheet grades will be dropped. As an incentive, if you do all 10 worksheets, whatever extra points you earn will be added to your total score.

Homework: The homework problems are listed in the suggested problems column in the course schedule. While homework will neither be collected nor graded it is highly recommended that you complete all problems.

Makeup exams will only be given to students with an acceptable excuse. The only acceptable excuses are **religious holy day, family emergency, school sponsored event, job interviews, or sickness**. All absences require documentation. **All other absences will be given a zero for that test. No exceptions!**

Important Dates

August 31: is the last day you can add a class. If your name is not on my class roll then you cannot take this class.

September 8 Last day to drop with no tuition penalty.

September 15 Final Drop Deadline: Last day to drop with 50% tuition penalty.

September 29–October 28: Selective Withdrawal Period. If you stop attending classes and plan to withdraw from the course, it is your responsibility to withdraw from the course. You will not be able to withdraw yourself from the course after the above dates.

Students with Disabilities: If you have a documented learning disability or other condition that may affect academic performance you should:

1. Make sure this documentation is on file with Office for Disability Services (SUB I, Rm. 4205; 993-2474;http://ods.gmu.edu) to determine the accommodations you need; and
2. Inform me so we can discuss your accommodation needs.

Policy on Academic Dishonesty GMU is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. It is the responsibility of each student to ensure that other persons are not permitted access to answers to exams or quizzes or assignments which are required to be the sole work of each student. **IF A STUDENT IS SUSPECTED OF ACADEMIC DISHONESTY ON ANY EXAM OR QUIZ OR ASSIGNMENT REQUIRED TO BE THE SOLE WORK OF THE STUDENT, THE FOLLOWING PROCESS WILL APPLY**:

> At a minimum, a ZERO (0) on that exam or quiz or assignment and incident reported to the Honor committee.

See *academicintegrity.gmu.edu* for a copy of the Honor Code.

Obtaining Help: I will inform you at a later date if the Math Tutoring Center will be open during the fall semester.

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The following calendar gives a timetable for the course and the list of sections in the textbook, with suggested problems. The schedule is subject to change.

Unit/Date	Section/Activity	Suggested Problems
Unit 1	11.1 Parametrizations and Plane Curves	1-18 odd 19-24, 28, 32,37
	11.2 Calculus with Parametric Cruves	1-14 odd,21,23,25,29,31,33
Unit 2 (W1)	11.3 Polar Coordinates	1,2,4,5,8,11-26 odd, 35,43,45,47
9/2-9/4	11.6 Conic Sections	1-8,13,15,19,21,29,33
Unit 3 (W2)	12.1 Three Dimensional Coordinate System	1,11,15,18,21,23,27,29,37,39,53,57
9/9-9/11	12.2 Vectors	2,4,6,8,11,17,24,27,29,32,43
Unit 4 (W3)	12.3 The Dot Product	3,7,8,11,14
9/16-9/18	12.4 The Cross Product	3,5,7,13,14,17,21,23,37,43
Unit 5 (W4)	12.5 Lines and Planes in Space	3-11 odd, 15,19,24,29,35,37,41,63,65
9/23-9/25	12.6 Cylinders and Quadric Surfaces	1-12, 13-32 odd
9/30	**TEST I**	Units 1-5
Unit 6 (W5)	13.1 Curves in Space and Their Tangents	1-30 odd, 31-36
10/7-10/9	13.2 Integrals of Vector Functions	1-10 odd,13,19,22,24,25,26,27
Unit 7 (W6)	13.3 Arc Length in Space	1-10 odd, 11 13, 17
10/14-10/16	13.4 Curvature and Normal Vectors	1,3,5,7,9,13,15
Unit 8 (W7)	13.5 Tangential and Normal Components	1-16 odd, 17, 20
10/21-10/23		
Unit 9 (W8)	14.1 Functions of Several Variables	1,3,5,7,11,13-30 odd,31-36,37,43,49,51
10/28-10/30	14.2 Limits and Continuity in Higher Dimensions	1-12 odd,13,17,31,33,41,43,45
Unit 10 (W9)	14.3 Partial Drivatives	1-34 odd, 41,43,45,47,55,57,59
11/4-11/6	14.4 Chain Rule	1,4,5,9,11,13,17,19,27,29,31,35,37
11/11	**TEST II**	Units 6-10
Unit 11	14.5 Directional Derivatives and Gradient Vectors	1-28 odd, 31, 32, 34
	14.7 Extreme Values and Saddle Points	1-30 odd, 31, 35
Unit 12 (W10)	15.1 Double and Iterated Integrals over Rectangles	1-16 odd, 17, 21, 23
11/18-11/20	15.2 Double Integrals over General Regions	1-8 odd,9,11,15,17,19,23,29,31,33,39,41
Unit 13	15.3 Area by Double Integration	1-18 odd, 19, 21
	15.4 Double Integrals in Polar Coordinates	1-22 odd, 23, 25
Unit 14	15.5 Triple Integrals in Rectangular Coordinates	3,5,7,11,15,19,22,26,27
	15.7 Triple Integrals in Cylindrical and Spherical Coordinates	1-22 odd,23,27,29,31,38,43,45,47,49
	15.8 Substitution in Multiple Integrals	1-10 odd
12/9	**FINAL EXAM, 7:30P – 10:15P**	Units 11-14

Note: The first date in a unit is the date that a worksheet will be posted. All worksheets are posted at 12:00P on the dates indicated. The second date is when the worksheet is due. All worksheets are due at 11:59P on the dates indicated.