



MATH 221 Calculus III

Course Information

Semester : July 6, 2020 - August 7, 2020
 Credit : 4
 Teaching Hours : 50 Hours
 Time : 2 hours/day, Mon-Fri
 Professor : Dr. Abdulkeni Zekeria
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Catalog Course Description

A study of conic sections; vectors in two and three dimensions; dot and cross products and their applications to geometry; equations of lines and planes; quadratic surfaces; polar, cylindrical, and spherical coordinates; and functions of several variables, partial derivatives, differentials, directional derivatives, gradients, optimization problems, multiple integrals and their applications.

Prerequisite

A good knowledge of Calculus II

Text

Calculus - Early Transcendental 8th edition by James Stewart.

Objectives:

This is the second in the Calculus series. By the end of this course students should be able to:

- * Draw and do operation on vectors
- * Find derivatives of vector valued function
- * Find partial derivatives of functions of several variables
- * Evaluate multiple integrals
- * Do vector calculus

Topic Calendar

Materials to be covered is contained chapters 12 -16.

Date	Topic	Section	Date	topic	Section
July 6	3-D Coordinate System Vectors	12.1 12.2	July 23	Double Integral - Polar Coordinate Application of Double Integral	15.4 15.5
July 7	The Dot Product The cross Product	12.3	July 24	Surface Area	15.6



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July 8	Equations of Lines and plane	12. 5	July 27	Test #3	
July 9	Cylinders Quadric Surfaces Spherical Coordinate	12. 6 12. 7	July 28	Triple Integrals Triple Integral in other coordinate	15.7 15.8
July 10	Vector Functions and Curve Derivative and Integral of Vector Functions	13. 1 13. 2	July 29	Vector Field Line Integral	16.1 16.2
July 13	Arc Length and Curvature Test # 1	13. 3	July 30	The Fundamental Thm for Line Int Green's Theorem	16.3 16.4
July 14	Functions of Several Variable Limits and Continuity	14. 1 14. 2	July 31	Curl and Divergence	16.5
July 15	Partial Derivatives Tangent Planes	14. 3 14. 4	August 3	Parametric Surface & Their Areas	16.6
July 16	The Chain Rule Gradient Vector	14. 5 14. 6	August 4	Surface Integrals	16.7
July 17	Maximum / Minimum Value Lagrange Multipliers	14. 7 14. 8	August 5	Stokes' Theorem	16.8
July 20	Test # 2		August 6	The Divergence Theorem	16.9
July 21	Double Integrals Iterated Integrals	15. 1 15. 2	August 7	Final Exam	
July 22	Double Integral over General Region	15. 3			



General Suggestions

You are strongly recommended to attend classes regularly, take notes and participate in class discussions. Mastery of course work takes less effort if you keep well-organized notes, read your notes and appropriate sections in the text before and after class. Do as many exercises as you can but at al least the assigned ones. You haven’t mastered the material of a section unless you are able to do most of the exercises of that section.

You should spend at least two hours studying for this course for every hour we meet.

It is your responsibility to keep up with all the course work and seek help if needed. Remember that studying is hard work. You are encouraged to seek help from your instructor, classmate, friends, and (at first indication of possible difficulty. Comments and / or suggestions from students are always welcome. It is your responsibility to make certain that you receive all assignments, and other information on time. **NO MAKE-UPS AND NO LATE HOMEWORK.**

Assignments: Homework assignment will assign every day.

Tests & Final Exam

Each Monday will have a test. At the end of the semester there will be a comprehensive 2-hour Final Exam.

Homework Grades will be considered as one test. Lowest test will be dropped.

Grade: Final 40% Each test 15 % (Total 60%)

Grading Scale:

Points	Value	Scale	Points	Value	Scale	Points	Value	Scale
95-100	4.0	A	80-82	2.7	B-	67-69	1.3	D+
90-94	3.7	A-	77-79	2.3	C+	63-66	1.0	D+
87-89	3.3	B+	73-76	2.0	C	60-62	0.7	D-
83-86	3.0	B	70- 72	1.7	C-	below 59	0.0	F

Class Hours and Course Expectations

For our accreditation, it is essential that all Framingham State University credit courses follow the Federal Definition of credit hour: for every one hour of classroom or direct faculty instruction, a minimum of two hours of out-of-class student work is required. Since the summer courses meet for two contact hours daily (10 contact hours of classroom time weekly), the expectation is that students spend 20 hours per week doing out-of-class work. For the five week 4-credit course, this reflects 50 hours of classroom time and 100 hours of out-of-class time since the credit hour is defined as 50 minutes.

Academic Honesty Policy

Integrity is essential to academic life. Consequently, students who enroll at Framingham State University agree to maintain high standards of academic honesty and scholarly practice. They



shall be responsible for familiarizing themselves with the published policies and procedures regarding academic honesty.

Students are encouraged to discuss the course material with one another and form study groups to prepare for the quizzes and exams. However, collaboration on individual assignments (homework, quizzes, and exams) is not allowed and will be handled in accordance with FSU's [academic honesty policy](#).

Academic honesty requires but is not limited to the following practices: appropriately citing all published and unpublished sources, whether quoted, paraphrased, or otherwise expressed, in all of the student's oral and written, technical, and artistic work; observing the policies regarding the use of technical facilities.

Infractions of the Policy on Academic Honesty include, but are not limited to:

1. Plagiarism: claiming as one's own work the published or unpublished literal or paraphrased work of another. It should be recognized that plagiarism is not only academically dishonest but also illegal.
2. Cheating on exams, tests, quizzes, assignments, and papers, including the giving or acceptance of these materials and other sources of information without the permission of the instructor(s).
3. Unauthorized collaboration with other individuals in the preparation of course assignments.
4. Submitting without authorization the same assignment for credit in more than one course.
5. Use of dishonest procedures in computer, laboratory, studio, or field work. Further clarification on academic honesty will be provided, when appropriate, in individual courses.
6. Misuse of the University's technical facilities (computer machinery, laboratories, media equipment, etc.), either maliciously or for personal gain. Examples include but are not necessarily limited to:
 - a) Accessing the private files of another person or agency without express permission.
 - b) The unauthorized use of technical facilities for purposes not connected with academic pursuits. When evidence indicates that a student has improperly used a technical facility, an appropriate supervisor (faculty or staff member) may take appropriate action reflecting the seriousness of the infraction, ranging from a verbal warning to, but not beyond, denial of use of the facility. If coursework may have been plagiarized, the supervisor will also inform all concerned faculty members, who may take action as described in the procedures for handling cases of alleged infractions of academic honesty.

Falsification of forms used to document the academic record and to conduct the academic business of the University.



U.S. Copyright Law

This course website may contain copyrighted materials that are used in compliance with the U.S. Copyright Law. Under that law, materials may not be saved to your computer, revised, copied, or distributed without permission. They are to be used in support of instructional activity as part of this course only and shall be limited to the duration of the course, unless otherwise specified by the instructor or owner of the material. You may only download or print materials at the direction of your instructor who knows which materials are copyrighted and which are not.

Please remember that I am here to help you with your work and will gladly make any appropriate arrangements to do just that.

* If change in this schedule is necessary due to unforeseen circumstance, ample notice will be given.

Have an enjoyable and productive summer!!

* This syllabus may be amended during the semester