

MAT 203 : Calculus III with Applications

LEC 1 , Fall 2004 , StonyBrook

Instructor: (Lec1 : MF 12:50-2:10 P113)

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Teaching Assistant: (Rec1: W 10:40, 2: Tu 11:20)

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Text: by Larson, Hostetler, Edwards, 7th edition

Homework: Homework will be posted on the web each week. It should be handed in at the recitation of the following week.

Examinations and quizzes: There will be two midterm examinations and a final examination
There will be four quizzes given during recitations each including 3 problems. The lowest quiz score will be dropped and the rest used to determine the grade. Final examination : Friday December 17, 11-1:30pm
(Comprehensive)

Grades: Grades will be assigned on the following basis
Homework 15%, Quizzes 15%, Midterms 20% each, Final 30%.

Web page: The course web page is <http://www.math.sunysb.edu/~kalafat/203/>.

Note: If you have a physical, psychological, medical or learning disability that may affect your ability to carry out assigned course work, I urge you to contact the staff in the Disabled Student Services office (DSS), Room 133 Humanities, 632-6748/TDD. DSS will review your concerns and determine, with you, what accommodations are necessary and appropriate. All information and documentation of disability is confidential.

The syllabus of the course will actually follow the [contents](#) of the textbook very closely :

Syllabus

Vectors and Geometry

1. Vectors in the Plane and Space : 10.1 , 10.2
2. Dot and Cross Products : 10.3 , 10.4
3. Lines and Planes in Space : 10.5
4. Surfaces : 10.6
5. Cylindrical & Spherical Coordinates : 10.7

Vector Valued Functions

6. Vector Valued Functions : 11.1 , 11.2
7. Velocity and Acceleration : 11.3
8. Tangent and Normal Vectors : 11.4
9. Arclength : 11.5

Functions of Several Variables

10. Functions of Several Variables : 12.1
11. Limits and Continuity : 12.2
12. Partial Derivatives : 12.3
13. Differentials : 12.4
14. Chain Rules : 12.5
15. Directional Derivatives and Gradients : 12.6
16. Tangent Planes and Normal Lines : 12.7
17. Extrema of Functions of two variables : 12.8

MIDTERM 1 , Friday 15th October , See below for details

18. Applications of Exrema : 12.9
19. Lagrange Multipliers : 12.10

Multiple Integration

20. Iterated Integrals : 13.1
21. Double Integral : 13.2
22. Polar Coordinates : 13.3
23. Mass, Center of Mass : 13.4
24. Surface Area : 13.5
25. Triple Integrals : 13.6

MIDTERM 2 , Friday 12th November , See below for details

26. Triple Integrals in Cylindrical and Spherical Coordinates : 13.7
27. Change of Variables: Jacobians : 13.8

Vector Analysis

28. Vector Fields : 14.1
29. Line Integrals : 14.2
30. Conservative Vector Fields and Independence of Path : 14.3
31. Green's Theorem : 14.4
32. Parametric Surfaces : 14.5
33. Surface Integrals : 14.6
34. Divergence Theorem : 14.7
35. Stokes' Theorem : 14.8

FINAL , Friday 17th December , 11-1:30pm , See below for details

Homework:

HW01 : 12.1-14,16,20,22,27,34,36,45-48,52,56,68,72
HW02 : 10.1-52,56,70,72 **10.2**-41,84 **10.3**-18,48 **10.4**-10,32 **10.5**-10,34,39,76,82
HW03 : 10.6-2,24,30,44 **10.7**-28,93,94 **11.1**-38,50 **11.2**-8,38,58 **11.3**-16,17,20,22
HW04 : 11.4-6,16,20 **11.5**-10 **12.2**-2,25,52 **12.3**-2,20,34,35
HW05 : 12.3-30,71 **12.4**-10,14,17,33,43 **12.5**-14,17,26,35,40
HW06 : 12.6-9,28,33,62,63 **12.7**-12,25,34,53 **12.8**-25,26,45
HW07 : 12.8-51,57 **12.9**-1,15,16 **12.10**-2,5,21,25,35
HW08 : 13.1-14,52,55,62 **13.2**-28,39,40,49,51,54 **13.3**-8,19,21
HW09 : 13.3-31,40 **13.4**-13,22 **13.5**-11,13 **13.6**-14,15,22,25 **13.7**-10,13,18,19,20
HW10 : 13.7-33 **REV13**-49 **13.8**-10,20,21 **14.1**-39,55,60
HW11 : 14.2-4,13,25,32 **14.3**-15,17 **14.4**-7,19,23 **14.5**-20,21,22,26
HW12 : 14.6-16,21,23 **14.7**-2,7,15 **14.8**-7,10,20 **END**

MIDTERM 1 INSTRUCTIONS:

- Study the sections 10.5,10.6,11.3 and CH12 upto sec 12.8
- There will be no new HW assignment on the week of midterm
- **Exam Locations:** If your lastname is between A-K come to the class(P113) if between L-Z go to P131, it's located across the undergraduate office in the math building
- You're supposed to be ready in the exam place at 12:45
- No calculators are allowed

MIDTERM 2 INSTRUCTIONS:

- Midterm 2 covers 12.9-13.6 (note the change)
- There will be no new HW assignment on the week of midterm
- **Exam Locations:** If your lastname is between A-K come to the class(P113) if between L-Z go to P131, it's located across the undergraduate office in the math building
- You're supposed to be ready in the exam place at 12:45
- No calculators are allowed

FINAL INSTRUCTIONS:

- Final is cumulative with emphasis on the last chapter. There'll be 4 problems from the last chapter, 2 problems from the previous ones.
- There'll be a review session by your TA on Friday this week, contact him for the time and place
- **Exam Location:** ESS-001 , (Earth and Space Sciences)
- You're supposed to be ready in the exam place at 10:55
- No calculators, books and notes are allowed. If you have your book or notes with you, they should stay in a bag during the exam, not to be seen from outside.