

**Syllabus for AMAT 214
Calculus of Several Variables
Fall 2012 Class number 7270**

Prerequisites:

AMAT 113 or 119.

Lecture:

MWF 1:40 - 2:35 PM Monday 2:45 - 3:40 PM, Physics room 123

Lecturer: Dr. Joshua Isralowitz

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Phone: 442-4611
Office Hours: WF 11:30 AM - 1:30 PM and by appointment

Text:

Stewart, *Calculus: Early Transcendentals, Multivariable Calculus*, 7E, Cengage Learning (with webassign)

Website/HW listings: www.albany.edu/~ji126652

Homework and Quizzes: Homework will be announced in class and posted on UBLearns. Part of the assignment will need to be completed on webassign. For the webassign assignments, you will have unlimited tries to solve the problem. Each webassign assignment is out of 100 points and you will lose equal points for each problem skipped or not (eventually) solved correctly.

Please Note!!! This homework policy is intended to help you and is an easy way to boost up your grade a little. Furthermore, when doing webassign HW, click on **Master it** for useful steps on how to solve a given problem. You might also want to use **Discuss it** for online tutoring help if need be.

I will also assign other homework that will not be collected, but that you should do nonetheless, since the exams and quizzes will be made to be similar to the homework.

Finally, short quizzes will be given every week on fridays starting Sept. 7. While these quizzes obviously effect your overall grade, they are primarily intended to assess your understanding of the relevant material before the exams. Also note that the lowest two quizzes will be dropped.

Tutoring room: The department maintains a tutoring room in ES 138, staffed Monday through Thursday from 9am to 4pm and Friday from 9am to 2:30pm, and will open sometime soon after Labor day. However, students in 100 level courses have priority for this service.

Exams: There will be three exams and no final. Note that we will have the third exam on the scheduled final date (so as to give us one extra review date instead of having an exam at the last day of class) and that the third exam will be slightly longer than the other exams. There will be no makeup for the exams unless there is an emergency or there is a similar situation. Written evidence of the absence will be required in such a situation.

Grading: Grades will be curved at the end of the semester, rather than each quiz/exam being individually curved. That being said, I generally curve grades so that the median is around a B-

Quizzes: 15 %
Homework (webassign): 15 %
Three 55 minute exams: 70 %

Calculators: Students may use a NON-GRAPHING and NON-PROGRAMMABLE calculator on exams and quizzes. You will NOT be allowed to use a Graphing or Programmable calculator on the exams and quizzes.

WebAssign self enrollment: You **must** enroll yourself into this course for webassign. For instructions on how to do this, please consult http://www.webassign.net/manual/FDOC/FDOC_self_enrollment.ppt

Undergraduate Academic Regulations: Please see the following website for more information regarding the academic regulations at SUNY Albany http://www.albany.edu/undergraduate_bulletin/regulations.html

Tentative Schedule:

Date	Sections	Topic
8/27	12.1/12.2	Three dimensional coordinate systems, Vectors
8/29	12.2/12.3	Vectors, The dot product
8/31	12.3/12.4	The dot product, The cross product
9/5	12.4	The cross product
9/7	12.5	Equations of lines and planes
9/10	12.6	Cylinders and quadratic surfaces
9/12	12.6/13.1	Cylinders and quadratic surfaces, Vector functions and space curves
9/14	13.1	Vector functions and space curves
9/19	13.2	Derivatives and integrals of vector functions
9/21	13.3	Arc length and curvature
9/24	13.4/14.1	Motion in space, Functions of several variables
9/28	review	
10/1	14.2	Exam, Limits and continuity
10/3	14.3	Partial derivatives/Chain rule
10/5	14.4	Chain rule
10/8	14.5/14.6	Tangent planes and linear approximation, Directional derivatives and the gradient vector
10/10	14.6/ 14.7	Directional derivatives and the gradient vector, Maximum and Minimum values
10/12	14.7	Maximum and Minimum values
10/15	14.8	Lagrange multipliers
10/17	15.1	Double integrals over rectangles
10/19	15.2	Iterated integrals
10/22	15.3/15.4	Double integrals over general regions, Double integrals in polar coordinates
10/24	15.4	Double integrals in polar coordinates
10/26	15.5	Applications of double integrals
10/29	15.6	Surface integrals
10/31	15.6/15.7	Surface integrals, Triple integrals
11/2	Review	
11/5	15.7	Exam, Triple integrals
11/7	15.8	Triple integrals in cylindrical coordinates
11/9	15.8/15.9	Triple integrals cylindrical, Triple integrals in spherical coordinates
11/12	15.9/15.10	Triple integrals in spherical coordinates, Change of variables (time permitting)
11/14	15.10/16.1	Change of variables, Vector fields,
11/16	16.1	Vector fields
11/19	16.2/16.3	Line integrals, the FTC of line integrals
11/26	16.3, 16.4	The FTC of line integrals
11/28	16.5	Curl and divergence,
11/30	16.6	Parametric surfaces and their areas
12/3	16.7	Parametric surfaces and their areas, Surface integrals
12/5	16.7	Surface integrals, Stokes Theorem
12/7	16.8/16.9	Stokes Theorem, The divergence theorem
12/10	16.9	The divergence theorem, Review