MATH 32B, Calculus of Several Variables, Lecture 3, Winter 2015

Exterior Course Website: http://www.math.ucla.edu/∼heilman/32bw15.html
Prerequisite: MATH 31B and MATH 32A, with grades of C- or better.
Course Content: Introduction to integral calculus of several variables, line and surface integrals.

This Document: Reading this syllabus counts as one homework grade. In order to receive credit for reading the syllabus, you must read the syllabus by January 9th, noon, PST. Make sure to read to the end.

Lecture Meeting Time/Location: Monday, Wednesday and Friday, 2PM-250PM, Rolfe 1200
Instructor: Steven Heilman, heilman@math.ucla.edu
Office Hours: Mondays, 10AM-12PM, Wednesdays, 1PM-2PM, MS 7370
TAs: Ohrt, C. J, cohrt@ucla.edu; Shani, A. assafshani@ucla.edu; Keneda, J. T. jkeneda@math.ucla.edu
TA Office Hours: Ohrt: Tuesdays 12PM-1PM, Thursdays 3PM-4PM, MS 3915E; Shani: Thursdays 3PM-4PM, MS 2344; Keneda: Tuesdays and Thursdays, 11AM-12PM, MS 2951
Discussion Session Meeting Time/Location:

- 3A, Tuesday, 2PM-250PM, MS 5137. Ohrt, C. J. www.math.ucla.edu/∼ cohrt
- 3B, Thursday, 2PM-250PM, Pub Aff 1270. Ohrt, C. J. www.math.ucla.edu/∼ cohrt
- 3C, Tuesday, 2PM-250PM, PAB 1749. Shani, A. www.math.ucla.edu/people/grad/assafshani
- 3D, Thursday, 2PM-250PM, PAB 1749. Shani, A. www.math.ucla.edu/people/grad/assafshani
- 3E, Tuesday, 2PM-250PM, PAB 1434A. Keneda, J. T. www.math.ucla.edu/∼jkeneda/teaching.html
- 3F, Thursday, 2PM-250PM, PAB 1434A. Keneda, J. T. www.math.ucla.edu/∼jkeneda/teaching.html

Required Textbook: J. Rogawski, Multivariable Calculus, **Second Edition**, W.H. Freeman & Co.
Other non-required textbooks: Calculus, Thomas
First Midterm: Monday, January 26th, 2PM-250PM. If your last name begins with the letter A through O, come to Rolfe 1200. If your last name begins with the letter P through Z, come to Haines 118.
Second Midterm: Friday, February 27th, 2PM-250PM, Broad 2160E
Final Exam: March 20, 3PM-6PM, Broad 2160E
The Student Math Center in MS 3974 offers group study and tutorials. For their schedule, click here.
Other Resources: Applets by Flash&Math, Applets from Monroe CC with activities, Applets from wordpress.

Email Policy:

- My email address for this course is heilman@ucla.edu.
- It is your responsibility to make sure you are receiving emails from heilman@ucla.edu, and they are not being sent to your spam folder.

- Do NOT email me with questions that can be answered from this document.
- Homework questions sent to me by email will be answered altogether in the form of a "digest." I will get to every question, but I cannot reply to every email. This digest will be sent out typically two days before the homework is due.

Exam Procedures: Students must bring their UCLA ID cards to the midterms and to the final exam. Phones must be turned off. Cheating on an exam results in a score of zero on that exam. Exams can be regraded at most 15 days after the date of the exam.

Exam Resources: Here is a page containing old exams for a similar multivariable course. (Exams 3A,3B,4A,4C are most relevant.) Here is another page containing old exams for a similar multivariable course. (Here I would recommend the Spring 2001 Midterm Exam 2, which should correspond closely to our second exam.) Also, for our second exam, try out this exam, (problems 2 through 9); see also this exam with solutions (and maybe skip Question 8). For the final exam, here is a page containing several practice finals with solutions. Occasionally these exams will cover slightly different material than this class, or the material will be in a slightly different order, but generally, the concepts should be close if not identical.

Homework Policy:

- Late homework is not accepted.
- You may not use the internet to try to find answers to homework problems.
- The lowest two homework grades will be dropped. This policy is meant to account for illnesses, emergencies, etc.
- Do not submit homework via email.
- There will be 9 homework assignments, assigned weekly on Friday and turned in at the **beginning** of class on the following Friday.
- A random subset of the homework problems will be graded each week. However, it is strongly recommended that you try to complete the entire homework assignment.
- Collaboration on the homework is allowed and encouraged.
- All homework assignments must be **written by you**, i.e. you cannot copy someone else's solution verbatim. I would encourage you to understand carefully how the homework solutions work, and how you would find such a solution on your own. Overusing collaborations or search technology should result in poor performance on the exams.
- Label your homework with the lecture number, and discussion section number.
- Homework solutions will be posted after the homework is turned in.

Quiz Policy:

- There will be two quizzes, administered in the second and sixth weeks of class. In the second and sixth weeks of class, the homework will not be turned in, and instead, the quiz will count for the homework grade. The problems from the quiz will closely resemble or be identical to problems from the homework from that particular week.
- Quizzes will be administered in your discussion section, which is on either Tuesday or Thursday. Each quiz should last about 15 minutes.

Grading Policy:

- The final grade is given by the larger of the following two schemes. Scheme 1: homework (15%), the first midterm (20%), the second midterm (25%), and the final (40%). Scheme 2: homework (15%), the largest midterm grade (35%), final (50%). The final grade will be curved. However, anyone who exceeds my expectations in the class by showing A-level performance on the exams and homeworks will receive an A for the class.
- We will use the MyUCLA gradebook.
- If you cannot attend one of the exams, you must notify me within the first two weeks of the start of the quarter. Later requests for rescheduling will most likely be denied.
- You must attend the final exam to pass the course.

Tentative Schedule: (This schedule may change slightly during the course.)

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	Jan 5: 16.1, Integrals in two variables	Jan 6	Jan 7: 16.2, Integrals over general regions	Jan 8	Jan 9: Homework 1 due. 16.3, 12.3, Polar coordinates
2	Jan 12: 16.4, 13.7, Integrals in polar coordinates	Quiz in section	Jan 14: 16.2, 16.3, Triple integrals	Quiz in section	Jan 16: Homework 2 (ungraded). 16.4, Cylindrical and spherical coordinates
3	Jan 19: No class	Jan 20	Jan 21: 16.5, Applications of multiple integrals	Jan 22	Jan 23: Homework 3 due, 16.6, Change of variables
4	Jan 26: Midterm #1	Jan 27	Jan 28: 16.6, Change of vars, 17.1, Vector Fields	Jan 29	Jan 30: Homework 4 due. 17.2, Scalar line integrals
5	Feb 2: 17.2, Vector line integrals	Feb 3	Feb 4: 17.3, Conservative Vector Fields	Feb 5	Feb 6: Homework 5 due. 17.3, Conservative Vector Fields
6	Feb 9: 17.4, Parametric Surfaces	Quiz in section	Feb 11: 17.4, Surface Area, Surface Integrals	Quiz in section	Feb 13: Homework 6 (ungraded). 17.5, Surface Integrals of Vector Fields
7	Feb 16: No class	Feb 17	Feb 18: 18.1, Green's Theorem	Feb 19	Feb 20: Homework 7 due, 18.1, Green's Theorem
8	Feb 23: 18.2, Stokes' Theorem	Feb 24	Feb 25: 18.2, Stokes' Theorem	Feb 26	Feb 27: No homework due. Midterm #2
9	Mar 2: 18.2, 18.3, Stokes' Theorem, Divergence Theorem	Mar 3	Mar 4: 18.3, Divergence Theorem	Mar 5	Mar 6: Homework 8 due. 18.3, Divergence Theorem
10	Mar 9: Leeway/review	Mar 10	Mar 11: Leeway/review	Mar 12	Mar 13: Homework 9 due. Review of course

Advice on succeeding in a math class:

- Review the relevant course material **before** you come to lecture. Consider reviewing course material a week or two before the semester starts.
- When reading mathematics, use a pencil and paper to sketch the calculations that are performed by the author.
- Come to class with questions, so you can get more out of the lecture. Also, finish your homework at least **two days** before it is due, to alleviate deadline stress.
- Write a rough draft and a separate final draft for your homework. This procedure will help you catch mistakes.
- If you are having difficulty with the material or a particular homework problem, review Polya's Problem Solving Strategies, and come to office hours.

Compliance

Ten percent of your homework grade is reading and complying with this document. To acknowledge that you have read and agree to the above, click here, and follow the instructions