Mathematics 243, Fall 2015 (Section #20970)
Vector Calculus – Honors (3 credits)

Lectures: MWF 11:00–11:50 AM, Snow 564

Instructor: Prof. Jeremy Martin
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Office hours: Tuesdays and Wednesdays, 1-2 PM, or by appointment

Prerequisites: Math 122/142 (Calculus II). You should have some experience with the basics of vectors (see, e.g., chapters 9–10 of Stewart's *Calculus: Concepts and Contexts*, KU edition) and with some multivariable calculus (chapters 11–12 of Stewart). A linear algebra course such as Math 290 is helpful, but not required.

Textbook: *Vector Calculus*, 4th ed., by Susan Jane Colley. Available at the KU Bookstore (864-4640, kubookstore.com). We will cover most of Chapters 1–7, working fairly quickly through Chapters 1–2 (which overlap with the material of 122/142). If time permits, we will cover Chapter 8.

Calculator: You should have a graphing calculator, such as the TI-83. You may use a more powerful calculator, such as the TI-89, but it is not necessary.

For some homework problems, you will need to be able to draw plots in 3-D. Free options include Desmos and WolframAlpha (good for quick calculations) and Sage (a more powerful programming language). Alternately, you can use a commercial package such as Maple, Matlab or Mathematica if you have access (but you shouldn't have to spend money on this).

Blackboard: All students should be automatically enrolled in Blackboard. Contact Prof. Martin if you are not able to access the Blackboard site. You are responsible for all information posted on Blackboard, including announcements and homework assignments.

Grading scale:

- Homework: 250 points
- Honors problems: 100 points
- Test #1: 200 points
- Test #2: 200 points
- Final exam: 250 points
- **Total: 1000 points**

Scoring 900 points guarantees you an A, scoring 800 guarantees you at least a B, etc. I may lower these requirements and/or use +/− grades at my discretion.

Homework: Homework is due in class every Monday (with some exceptions), starting August 31. I will post each assignment on Blackboard at least one week before the due date. There will be 12 homework assignments, each worth 25 points. I will drop your two lowest scores, including any missed assignments. If you know you will not be in class on a due date, you can turn in your homework in advance to my mailbox in the Math Department office, 405 Snow, or to my office, 618 Snow. Your homework should be as neat and legible as if it were typed, and all sheets should be stapled together. *Late homework will not be accepted.*

Honors Problems: In addition to the regular homework problems, I will pose a series of more challenging "honors problems." The total point value of the honors problems will be over 100 points, so you will have some choice about which problems to do. Turn in the honors problems separately from the regular homework.

Exams: There will be two in-class tests on **Monday, October 5** and **Monday, November 9**. The final exam is scheduled for **Tuesday, December 15**, from 10:30 AM–1:00 PM. The final will focus on material covered after the second test. learned in the beginning of the semester!)

Aids permitted on tests: You will be permitted to use a calculator of your choosing. Two students may not share a calculator on a test. Cell phones and any devices with Internet connections must be turned off during tests.

Makeup exams: If for some legitimate and unavoidable reason you are unable to attend a scheduled midterm or final exam, it is your responsibility to notify me *beforehand* to arrange a makeup exam. KU policy is that no student is required to take more than two final exams on a single day; check the exam calendar well in advance.

Approximate time commitment: This is a 3-credit course, so you should expect to spend at least 6 hours per week outside of class to get a decent grade. In addition to spending time on homework problems, you should get into the habit of reading a section or two ahead in the book, so as to be better prepared for lecture.

Incompletes: A grade of I is a rare occurrence and is reserved for cases in which a student has completed most of the course work at an acceptable level, but is prevented from completing the course due to extraordinary nonacademic circumstances. If an emergency arises and you think an incomplete may be warranted, you must talk to Prof. Martin *before* the final exam.

Academic honesty and collaboration: You are required to abide by all KU policies on academic integrity. Cheating, plagiarism or other academic misconduct will result in a failing grade on the assignment in question, notification of the student's dean, and usually further disciplinary sanctions, possibly including a failing grade in the course.

You are encouraged to collaborate with other students on the homework assignments. However, *each student must write up his or her own solutions and acknowledge all collaborators.* Copying someone else's homework, or allowing someone else to copy yours, is considered to be a form of cheating.

For more information, see KU's official policies on academic misconduct.

Students with disabilities: Student Access Services (`access.ku.edu`, 22 Strong Hall, 864-4064) coordinates accommodations and services for all students who are eligible. If you have a disability for which you wish to request accommodations, please contact SAS as soon as possible. Please also contact Prof. Martin privately in regard to your needs in this course.

Religious holidays: If you plan to observe a religious holiday which conflicts in any way with the course schedule or requirements, contact Prof. Martin at the beginning of the semester to discuss alternative accommodations.

Intellectual property: All course materials prepared by the instructor, together with the content of all lectures and review sessions, are the intellectual property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. Upon reasonable request, the instructor will usually grant permission to record lectures, on the condition that such recording is used only as a study aid by the student making the recording, and is not modified or distributed in any way. Course materials posted online are exclusively for the use of students in Math 243, and must not be redistributed without the instructor's consent.

Updated Fri 8/21/15