MATH 212.S03 : Multivariable Calculus
Spring 2018

Instructor: Miriam Kuzbary

Class Hours: TR 9:25 - 10:40 pm in HRZ 212

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Office Hours: MW 2:00 - 3:30pm and by appointment in HBH 48 (in the basement)

Course Description:

In this class we will generalize concepts from Calculus 1 and 2 to higher dimensions. We will use vectors to study properties of both real-valued functions and vector-valued functions. We will also study line integrals, multiple integrals, and surface integrals, as well as important theorems such as Green's theorem, Stokes' theorem, and Gauss' divergence theorem.

This is a generalization of the calculus you know from the one-dimensional world to the many-dimensional world and is a fundamental tool in many STEM applications. More than that, the subject is full of deep, theoretical results which are interesting in their own right. The goal of this class is to become fluent in computational techniques as well as to gain an understanding and appreciation for the theory holding it all together.

Course Expectations: Learning math takes a lot of work and often takes time to process and internalize. As a result, even if you are used to getting by without attending class, it is very important that you attend every lecture on time and do every homework assignment.

Learning math is like playing a new sport; you need to practice regularly and do different types of drills in order to become competent. This also means that mistakes are completely normal! Few people understand every single concept the minute it is taught. Our class time is your opportunity to make mistakes and ask questions. Do not be afraid of sounding silly!

During our lectures we will have many conversations about what we are learning, so come to class expecting that you will be both contributing to the discussion and taking away something interesting to think about.

Please expect to spend a minimum of three hours per hour of class working outside of the classroom. Though I will have office hours every week day, feel free to send me an email at any time with questions you have and I will respond promptly and arrange to meet with you if necessary. It is also your responsibility to check both your Rice email address and Canvas to keep informed of any announcements, homework assignments, syllabus adjustments, or policy changes made during scheduled classes.

Course Materials:

- The textbook for this class is Calculus Volume 3 - Open Stax available as a free download online at https://openstax.org/details/books/calculus-volume-3 . If you would like to purchase a hard copy, you can through the Rice bookstore.

- Online homework will be through Webwork (which is free) at
  http://webwork.math.rice.edu/webwork2/Math212Spring18Kuzbary/.
  Login to the course using your net ID as your username and your student ID number as your password.

Website: For general information and assignments see the course page on Canvas. For online homework, we will use Webwork (which is free) at http://webwork.math.rice.edu/webwork2. Login to the course using your net ID as your username and your student ID number as your password.

Homework: This class has two forms of homework to give you practice with the subject at different levels of depth:

- Online homework will be due through webwork by the beginning of class on Tuesdays and Thursdays.
- Written homework will be due every Thursday at the beginning of class.

Late homework will not be accepted unless you have a documented illness or other emergency. I will drop your lowest homework score. Working together is encouraged, however, each student must write up their homework on their own. Homework must be legible and your responses should be both well justified and clearly indicated. As a guideline, an average student from a multivariable calculus class should be able to read your homework and understand (and agree with) your solution to each problem.

Exams: This class will have two midterms on Thursday February 15 at 7-9pm and Tuesday March 27 at 7-9 PM and one final exam (7/28). The date for the final exam is set by the Registrars office and is not available at this time. It is the policy of the Mathematics Department that no final may be given early to accommodate student travel plans. If you make travel plans that later turn out to conflict with the scheduled final exam, then it is your responsibility to either reschedule your travel plans or take a zero on the final. More details will be announced closer to each exam date. If you have a conflict with any of these dates, please discuss it with me well in advance and we will find a solution.

Grading: Homework will account for 20% of the final grade, the two midterms will account for 25% each, and the final exam will account for 30% of the final grade.

Disability Support: Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with me during the first two weeks of class. All such discussions will remain as confidential as possible. Students with disabilities will need to also contact Disability Support Services in the Allen Center.