SYLLABUS FOR MATH 221 - VECTOR CALCULUS

BARD COLLEGE AT SIMON'S ROCK - SPRING 2013

Time: 9:00-9:55am MWF
        or 12:15-1:40pm TR

Location: FSH-201 or CL1-01, resp.

Instructor: Clark Musselman, Ph.D.

Email: clark@simons-rock.edu

Office: 2nd Floor - Hall College Center

Office Phone: (413) 528-7292

1. Course Webpage

The course webpage, located at http://bclarkm.weebly.com/teaching.html, will be updated with various documents pertaining to the course throughout the semester.

2. Required Text

Hass, J., & Weir, M.D. (2010). *Thomas' Calculus: Multivariable.* Boston: Pearson Addison-Wesley. ISBN:0-321-64369-0.

Note: The following text *contains* the required text. It also contains single-variable calculus.

Hass, J., & Weir, M.D. (2010). *Thomas' Calculus.* Boston: Pearson Addison-Wesley. ISBN:0-321-58799-5.

3. Office Hours

Office hours are M 1:15-2:15, T 1:50-2:50, R 11:00-12:00, and by appointment. This time is reserved for you to talk to me about homework, exams, or anything else pertaining to the course. You do not need to make an appointment with me; you may simply stop by my office. If you are unavailable during my normally scheduled office hours, send me an email and we can make an appointment.

4. Course Description

This course deals with multivariable calculus and vector analysis. Topics include differentiation of vector functions, multiple integrals, line and surface integrals, vector fields, and the theorems of Stokes and Green. Applications to geometry and physics are considered as time permits. Prerequisites: Mathematics 211 and 220.

5. Evaluation

Your grade will be based on homework (20%), class participation and presentations (5%), three midterm exams (10% each), one team project (20%) and a final exam (25%). No grades will be dropped and there will be no extra credit. All work is due in class on the due date, however students may turn in work to me in person by 4:30pm without penalty. Students will not be reminded to turn work in during class. It is the students responsibility to remember to submit work to the instructor. Work delivered by campus mail will not be accepted.

There will be no make-ups given. If you must miss a quiz, exam, or final due to personal illness, a family emergency, or an official Simon's Rock sport or academic trip, you must provide official documentation (before the exam, or as soon as possible afterward if before-hand is impossible). If you do so, you may be excused from the missed quiz, exam, or final. Excuses will only be given with official documentation and only for the reasons listed above.

6. Homework

Completing homework assignments and checking your answers are the two most important things you can do to be successful in mathematics. Whether or not a given assignment is collected or graded, it is the responsibility of the student to complete *every* problem and to verify that *every* answer is correct. While it is expected that each student write up solutions on their own, it is highly recommended that students work in groups, especially on difficult problems.

Eventually, every student will require some assistance in completing their homework. Help is available in many forms. The student can talk to their classmates, see a tutor, visit my office hours, or email me. **Do not let more than a day or two go by without getting your questions answered.**

Homework assignments are posted online and will **not** be announced in class. Regularly, some homework will be collected and given a 'check' or 'no-check'. The number of 'no-checks' a student receives will adversely affect the homework and class participation portion of their final grade.

When submitting homework, please make sure your pages are stapled together and that no additional assignments are included. If you prefer to write your homework in a notebook or on a tablet computer, then you may turn in a photo-copy or a print-out of the assignment, as long as it is your original work and in your own hand writing. No notebooks or email submissions will be accepted. Also, label each problem and leave plenty of space between them. This will allow your ideas to come across more clearly. If you find yourself crossing out much of your work, please re-write the page.

7. Presentations

Shortly after each exam, we will go over the exam in class. I will choose one student to present each exam problem on the board to the class and I will make every effort to give at least 48 hours notice. This will allow you to practice your presentation and to make corrections to your work, if need be. I am happy to meet with any student to discuss their work before they present.

Each student will be chosen at least once during the semester to present an exam problem. If there are more students than exam problems, additional problems will be selected from the homework.

Your presentation will be graded not just on content, but also on clarity and completeness and will count toward the homework and class participation part of your grade. The purpose of this exercise is not to "grill" you on content knowledge, but to help you gain experience talking about mathematics in front of your peers. If you get stuck during your presentation, I will be there to help, however you should practice your presentation several times beforehand. You will lose credit if you are not prepared for your presentation.

8. Projects

During the semester, one team project will be assigned. The content of the project will be posted online at a later date. Teams will be assigned by me and will include two to four students. You will be expected to work with your group members and *only* with members of your assigned group. The content of the project should not be discussed with members of other groups until after the project has been submitted to the instructor. **Discussing the project beforehand, with anyone other than your team mates or the instructor, will constitute academic dishonesty.** As always, I am more than happy to meet with individual students or with entire groups to discuss the projects. Time permitting, you will be given time in class to work with your groups.

At the conclusion of the project, you will fill out a short questionnaire regarding your contributions and those of your teammates. Your contributions to the group will count towards your homework and class participation grade.

Your final write-up must be in your own writing, legible, and be written in blue or black ink. Typed solutions will be accepted but this is not recommended. Illegible solutions will be returned to the student ungraded. The student will then have the opportunity to rewrite and resubmit their work. Late submissions, including those returned for being illegible, will be given a 5% penalty per day, until I receive a legible and complete write-up.

9. Exams

Three midterm exams will be given throughout the semester. No calculators, notes, or books will be allowed on exams.

A final exam will be given at a date to be determined by the College. No calculators, notes, or books will be allowed. The final exam will be based on material from the entire course, although it will be weighted slightly more heavily on the material covered after the last midterm exam.

10. Attendance

Classes at Simon's Rock are interactive and all participants are adversely affected if one student is missing. As such, you are expected to attend every class. If you do miss a class, you are responsible for learning the material that was covered in your absence. You are also responsible for any quiz, exam, or in-class activity that you miss (see evaluation, above). Initially, the student should contact a classmate to determine what material was missed. Only after consulting a classmate should the student contact the instructor for extra help on missed class material. Further, if you miss three classes for any reason, The Office of Academic Affairs will be notified and you may be suspended from the course.

A student who arrives late or uses any electronic device (cell phone, laptop, etc.) during class will be considered *effectively* absent. Two effective absences will be treated as a single absence. Attendance will be taken once during class. If a student is not present when attendance is taken, it is the student's responsibility to check in with the instructor after class.

11. Further Information

- Keep a copy of all your work before you turn it in so that nothing is lost in the unlikely event that papers go missing.

- You should expect to spend *at least* three hours working on this course outside of class for *each* hour in class.
- Academic honesty is valued at Simon's Rock. All students are expected to know and uphold the college's policies on academic dishonesty as described in the Catalogue.
- A student with special needs should feel welcome to discuss these with the instructor.
- Keep an updated copy of this syllabus. In the event that you transfer to another institution, this syllabus may be required for transfer credits to be accepted by your new institution.
- This syllabus is subject to change.
- Last updated 00:19 Monday 4$^{\text{th}}$ February, 2013