Syllabus: Math 244 Calculus III, Fall 2014

Course Math 244 section 5 meets MTWF 2:10-3:00 in RH 232
Course web page `http://mathcs.slu.edu/~clair/calc3`

Instructor Dr. Bryan Clair
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Ritter Hall 110, 977-3043

Office Hours M 10-11, W 3-4, F 1:10-2, or by appointment.
Stop by my office anytime, and if I'm around I can usually help you.

Textbook *Calculus*, 6ed, McCallum, Huges-Hallet, Gleason, et al.
This course will only require the multivariable version, which contains chapters 12-21.

Technology A calculator is not required, though you may use one on exams.
This class will require complicated integration and differentiation, as well as two and three dimensional graphing. In class, I intend to use Wolfram Alpha (`http://www.wolframalpha.com`) which is free, on the web, and can do most of what we need. As a SLU student, you may sign up for a free Wolfram Alpha Pro account. Find instructions on our course web page. You are welcome to use Mathematica, Maple, MATLAB, Sage, or any other program you prefer.

Homework There will be two kinds of homework in this class: Electronic homework on Webwork and written homework to be handed in on paper.

Webwork problems are generally routine computations you need to practice to become comfortable with the course material. You submit answers to these problems at the webwork site (`https://webwork.slu.edu/webwork2/FL14-Math-244-Clair`), and receive immediate feedback. Your Webwork password and username are the same as your MySLU and Banner username and password.

Written homework assignments will consist of a small number of more involved problems. Your work should be neat and legible, with plenty of blank space on your pages so I have room to write comments. Staple your homework!

I encourage you to work together on homework, but everyone should write up results separately. You should also feel free to check your homework by looking at solutions in the book or using technology, and then making corrections.

I grade homework as $+$, $\checkmark$, or 0.

Late written homework is always accepted for half credit, but I will not write comments.

Exams I give makeup exams only for severe and *documented* reasons.

Exam 1 Wednesday, September 24
Exam 2 Wednesday, November 5
Final Exam Monday, December 15, 2:00-3:50

In addition, there will be one short (10 minute) in-class quiz every week.

Grading Grading is on a straight scale (uncurved), with 90%,80%,70%,60% guaranteeing A,B,C,D respectively. Grading is weighted as follows:

Homework: 15%
In class work: 10%
Quizzes: 10%
Exam 1: 20%
Exam 2: 20%
Final Exam: 25%

Honesty Students are expected to be honest in their academic work, as per the Honesty Policy of the College of Arts & Sciences, available on the internet at

`http://www.slu.edu/college-of-arts-and-sciences-home/undergraduate-education/academic-honesty`

You are allowed to use any and all outside resources to help you complete your homework. Students who work together must write up results separately.

For exams and quizzes, no notes or outside help is allowed. In cases when two or more students collaborate on an exam, all will be subject to penalties. Most types of calculators will be allowed on exams.

Disabilities In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. Students who think they might benefit from these resources can find out more about Course-level support (e.g., faculty member, departmental resources, etc.) by asking your course instructor. University-level support (e.g., tutoring/writing services, Disability Services) by visiting the Student Success Center (BSC 331) or by going to http://www.slu.edu/success. Students who believe that, due to a disability, they could benefit from academic accommodations are encouraged to contact Disability Services at 314-977-8885 or visit the Student Success Center. Confidentiality will be observed in all inquiries. Course instructors support student accommodation requests when an approved letter from Disability Services has been received and when students discuss these accommodations with the instructor after receipt of the approved letter.

Course Topics The amounts of time are only approximate.

Multivariable functions. Ch 12. 2 weeks.
Partial derivatives. Ch 14. 2 weeks.
Vectors. Gradient. Directional derivative. Ch 13, 14. 1 week.
Optimization. Ch 15. 1.5 weeks.
Multiple integrals. Ch 16. 2 weeks.
Parameterized curves. Vector fields. Ch 17. 1.5 weeks.
Line integrals. Green's Theorem. Ch 18. 1 week.
Flux integrals. The divergence theorem. Ch 19. 1 week.
Cross product, curl, and Stokes' theorem. Ch 20. 1 week.