Calculus III: Multivariable Calculus, Fall 2016

- **Instructor**: Professor Chris Kottke
- **Office**: HNS 104
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- **Phone**: 914-487-4516
- **Office Hours**: TBD
- **Lectures**: MWF 10:00-10:50, LBR 248
- **Workshop**: W 2:00-3:20, HNS 106
- **Textbook**: Calculus, by James Stewart, 7th ed.

Course Description: This class is a continuation of Calculus I and II. We will cover the calculus of functions of several variables and vector-valued functions, including maximization/minimization; directional derivatives; gradient, curl and divergence; line, surface and volume integrals; and the classical vector calculus theorems: Green's Theorem, Stokes' Theorem and the Divergence Theorem.

Reading Assignments: A reading assignment for each class will be posted on the course webpage and in the Canvas course prior to each lecture. This reading should be completed *before* the lecture. Unless otherwise specified, you will be responsible for all material in the reading assignment, even if it is not covered in lecture. A provisional lecture schedule appears on the second page.

Homework: Homework problems will be assigned after each lecture, *but will not be collected*. Instead, a selection of these problems will appear on each weekly quiz.

Quizzes: There will be a 20 minute quiz at the beginning of lecture each Friday (excepting the two Exam days below), which will consist of two to four problems selected from the homework problems from the previous three lectures.

Exams: There will be two in-class midterm exams, and a cumulative final. Dates are as follows:
- Exam 1: Friday, September 23
- Exam 2: Friday, November 4
- Final exam: TBD

Assessment: Your course performance (Sat/Unsat) will be evaluated based on quizzes and exams, weighted as below. Class participation and attendance will be reflected in the narrative evaluation.
- Quizzes: 20%
- Exam 1: 20%
- Exam 2: 20%
- Final Exam: 40%

Policies: A student claiming a need for special accommodations because of a disability must work with the Counseling and Wellness Center, which will establish the need for specific accommodations and communicate them to the instructor.

No student shall be compelled to attend class or sit for an examination at a day or time when he or she would normally be engaged in a religious observance or on a day or time prohibited by his or her religious belief. Students are expected to notify their instructors if they intend to be absent for a class or announced examination, in accordance with this policy, prior to the scheduled meeting.

Monday	Wednesday	Friday
8/22: 12.1, 12.2: vectors in 3D	**8/24**: 12.3, 12.4: Dot, cross products	**8/26**: 12.5, 12.6: Lines, planes, surfaces
8/29: 13.1: Curves	**8/31**: 13.2: Derivatives of curves	**9/2**: 14.1: Multi-variable funcions
9/5: Labor Day	**9/7**: 14.2, 14.3: Limits and derivatives	**9/9**: 14.4: Tangent planes
9/12: 14.5: Chain rule	**9/14**: 14.6: Gradient	**9/16**: 14.7: Extrema
9/19: 14.7: Extrema cont'd	**9/21**: Review	**9/23**: *Exam 1*
9/26: 15.1: Double integrals	**9/28**: 15.2: Iterated integrals	**9/30**: 15.3: Integrals over regions
10/3: 15.4: Polar coordinates	**10/5**: 15.5: Applications	**10/7**: 15.7: Triple integrals
10/17: No class	**10/19**: 15.8: Cylindrical coordinates	**10/21**: 15.9: Spherical coordinates
10/24: 15.8, 15.9: Special coordinates	**10/26**: 16.1: Vector fields	**10/28**: 16.2: Line integrals
10/31: 16.3: FTCLI	**11/2**: Review	**11/4**: *Exam 2*
11/7: 16.4: Green's Theorem	**11/9**: 16.5: Curl and divergence	**11/11: Veteran's Day**
11/14: 16.6: Surfaces and area	**11/16**: 16.6: Surfaces cont'd	**11/18**: 16.7: Surface Integrals
11/21: 16.8: Stokes' Theorem	**11/23**: 16.9: Divergence Theorem	**11/25: Thanksgiving break**
11/28: Review	**11/30**: Review	