Calculus III: Multivariable Calculus, Fall 2018

- **Instructor**: Professor Chris Kottke
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- **Phone**: 914-487-4516
- **Office**: HNS 104
- **Office Hours**: Mon 3-4, Tue 1:30-2:30, Fri 11-12
- **Lectures**: MWF 10:00-10:50, LBR 248
- **Workshop**: W 2:00-3:20, HNS 106
- **TA**: Rayne Craig nikki.craig16@ncf.edu
- **Textbook**: Calculus, by James Stewart, 8th ed.
- **Course Webpage**: http://ckottke.ncf.edu/calc3/, or Canvas

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 max/minimization; directional derivatives; gradient, curl and divergence; line, surface and volume integrals; and the classical theorems of vector calculus: 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 below.

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 Fridays following Exams 1 and 2), 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: Wednesday, October 3, in class
- Exam 2: Wednesday, November 7, in class
- 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: Students in need of academic accommodations for a disability may consult with the office of Students Disability Services (SDS) to arrange appropriate accommodations. Students are required to give reasonable notice prior to requesting an accommodation. Students may request an appointment with SDS in-person (HCL3), via phone at 941-487-4496, of via email at disabilityservices@ncf.edu.

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, well in advance of the scheduled meeting.

Monday	Wednesday	Friday
8/27: 12.1–12.3: Vectors, dot products	**8/29**: 12.4, 12.5: Cross prod.s, lines, planes	**8/31**: 12.6: Surfaces
9/1: Labor Day	**9/5**: 13.1, 13.2: Curves and velocity	**9/7**: 13.3: Arc length
9/10: 14.1: Multivariable functions	**9/12**: 14.2, 14.3: Limits, partial derivatives	**9/14**: 14.4, 14.5: Tan. planes, chain rule
9/17: No Class	**9/19: No Class**	**9/21: No Class**
9/24: 14.6: Gradient	**9/26**: 14.7: Local extrema	**9/28**: 14.8: Lagrange Multipliers
10/1: Review	**10/3: *Exam 1***	**10/5**: 15.1: Double integrals
10/8: 15.2: Integrals over regions	**10/10**: 15.3: Polar coordinates	**10/12**: 15.4: Applications
10/22: 15.6: Triple Integrals	**10/24**: 15.7: Cylindrical coordinates	**10/26**: 15.8: Spherical coordinates
10/29: 16.1: Vector fields	**10/31**: 16.2: Line integrals	**11/2**: 16.3: FTCLI
11/5: Review	**11/7: *Exam 2***	**11/9**: 16.4: Green's Theorem
11/12: Veteran's Day	**11/14**: 16.5 Curl and divergence	**11/16**: 16.6: Surfaces and area
11/19: 16.6: Surfaces continued	**11/21**: 16.7: Surface integrals	**11/23: Thanksgiving break**
11/26: 16.7: Surface integrals cont'd	**11/28**: 16.8: Stokes' Theorem	**11/30**: 16.9: Divergence Theorem
12/3: Review	**12/5**: Review	