Instructor: Paul Goerss, Lunt 206  
Email: pgoerss@math.northwestern.edu  
Office hours: MF, 1–2 W, 3–4, or by appointment

Course Time: Every Day Tech M128 at 11AM.  
Texts: J. Stewart, Essential Calculus  
W.E. Boyce and R.C. DiPrima, Elementary Differential Equations

After reviewing Green’s and Stokes Theorem we will spend most of the quarter on ODEs, covering Chapters 2–6 of Boyce and DiPrima.

Web site: Except for grades, all course material (including homework assignments) will be available through a web site accessible through the instructor’s home page.

Discussion: The weekly discussion and problem section meets Thursdays from 11 to 12. The TA is Paul vanKoughnett.

Homework: Homework will be assigned every day; a fraction will be collected for grading in the Thursday Problem Session. Please write up your solutions carefully, making sure to explain all of your reasoning. You may (and should) discuss the problems with one another, but please write up your solutions individually. Late homework will not be accepted.

Quizzes: There will be a short quiz every Thursday, except for exam weeks. The quizzes will be based on assigned homework problems. Missed quizzes cannot be made up; however, the lowest quiz score will be dropped.

The Evaluation Component – Grades: Your grade will be determined as follows:  
Two hour exams: 20% each  
Quizzes: 15%  
Homework: 10%  
Final: 35%

I reserve the right to adjust grades up given evidence of strong improvement over the quarter.

Test dates: The hour exams and the final exam will be held:

• Test 1: Tuesday, January 27, with material from Stewart and 1st order ODEs.  
• Test 2: Tuesday, February 24, with material on 2nd order ODEs and series solutions.  
• Final Exam: Thursday, March 19 at 9–11AM.

Students with disabilities: Any student requesting accommodations related to a disability or other condition is required to register with AccessibleNU (847-467-5530) and provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. All information will remain confidential.
Schedule of Topics

The following schedule should be regarded as a close approximation, not completely exact.

Week 1. Week of 1/5.
Integration; Green, Stokes, and Divergence Theorems

Week 2. (1/12)
First order ODEs

Week 3. (1/19)
No class Monday in observance of Martin Luther King Day.
Applications and numerical methods for 1st order ODEs

Week 4. (1/26)
Test 1 Tuesday
Second Order ODEs; the harmonic oscillator.

Week 5. (2/2)
2nd order ODEs; forcing and tuning.

Week 6. (2/9)
Higher order ODEs; series solutions

Week 7. (2/16)
Series solutions; singular points; Bessel functions

Week 8. (2/23)
Test 2 on Tuesday
Laplace Transform

Week 9. (3/2)
Laplace Transform; Dirac Delta function (impulse forcing)

Week 10. (3/9)
Reading week (Paul Goerss unavailable)