M312, Honor Vector Calculus, Spring '04

Course Description: The purpose of this course is to provide an honest introduction to integration theory in $\mathbb{R}^n$ and over submanifolds of $\mathbb{R}^n$.

We will cover chapters 4,5, and 6 of the text as well as some additional material only covered in class. (Notes might be provided). The topics are

(1) Volumes and determinants.
(2) The exterior algebra
(3) Integration of functions and forms.
(4) Generalizations of the fundamental theorem of calculus
(5) Applications to physical flows

Text: *Vector Calculus, Linear Algebra, and Differential Forms* by Hubbard and Hubbard.

Instructor information:

- Instructor: Professor Chris Judge

- Office: Rawles Hall 241

- Office hours: To be determined.

- Phone: 855-2353

- E-mail: cjudge@indiana.edu

Coursework:

- *Exams:*

  - Exam 1 (Chapters 4, 5) worth 15% of grade
  - Exam 2 (Sections 6.1-6.6) worth 15% of grade
  - Final exam worth 20% of grade.

- *Homework:*

  - Homework assigned and collected weekly worth 40% in total.
  - In addition, you are responsible for understanding how to do the assigned (but not collected) exercises in the text.

- *Class participation:* Worth 10 % of grade. Please attend every class and ask questions!

- *Grading scale:* 60-70-80-90 scale at minimum.