18.02A Second Half, Spring Semester 2004

General Information

Class meetings: Tuesday and Thursday 1:00–2:00, Friday 2:00–3:00 in 4-145.

Text: Simmons, *Calculus with Analytic Geometry*, 2nd edition, McGraw-Hill. *18.02A Supplementary Notes* (CopyTech, 11-004). The notes are what you got halfway through the fall semester—no purchase necessary.

Lecturer: David Vogan, 2-281 (x3-4991, `dav@math.mit.edu`). Office hours are Tuesday 11–12 and Wednesday 3–4, or by appointment.

Recitation meetings: Tuesday and Thursday 12:00–1:00 in 4-145.

Recitation instructor: S. Francisco, 2-229 (x3-1589, `francisco@mit.edu`).

Tutoring is available in 2-102 Monday through Thursday 3:00–5:00 and 7:30–9:30.

Homework assigned most Tuesdays in lecture. Due in recitation the following Tuesday. Late work will not be accepted.

Exams: One-hour exams during the lecture hour on Thursday, February 26, and Thursday, March 18. The exams will be closed book, and calculators will not be allowed.

Grading: The first exam will be worth 30%, the second 40%, and the problem sets 30%.

Syllabus

In the reading assignments, "V1" means section V1 of the Supplementary Notes; "21.1" means section 21.1 of Simmons. Doing the reading *before* class offers you the priceless (©MasterCard) possibility of catching the lecturer in an error.

Tues 2/3	Lecture 40	vector fields and line integrals in the plane (V1, 21.1)
Thurs 2/5	Lecture 41	gradient and conservative fields (21.2)
Fri 2/6	Lecture 42	potential functions (V2)
Tues 2/10	Lecture 43	Green's theorem (21.3)
Thurs 2/12	Lecture 44	flux and the normal form of Green's theorem (V3, V4)
Fri 2/13	Lecture 45	extensions and applications of Green's theorem (V5, V6 pp. 1–2)
Tues 2/17	NO MEETING	Monday classes held
Thurs 2/19	Lecture 46	triple integrals; rectangular and cylindrical coordinates (I3, 20.5, 20.6)
Fri 2/20	Lecture 47	spherical coordinates; gravitational attraction (20.7, G)
Tues 2/24	Lecture 48	applications
Thurs 2/26	Lecture 49	**Exam** covering 40–48
Fri 9/27	Lecture 50	vector fields in space; flux; surface integrals (V8, V9)

Tues 3/2	Lecture 51	surface integrals continued; divergence theorem (V10)
Thurs 3/4	Lecture 52	applications; ∇ notation (V15)
Fri 3/5	Lecture 53	line integrals in space; curl $\mathbf{F}$ and conservative fields (V11, V12)
Tues 3/9	Lecture 54	potential functions in space; Stokes' theorem (V13)
Thurs 3/11	Lecture 55	Stokes' theorem continued; topological considerations (V14)
Fri 3/12	Lecture 56	applications (V15)
Tues 3/16	Lecture 57	review
Thurs 3/18	Lecture 58	**Exam** covering 40–57