

MATHEMATICS 227 Section 201

ADVANCED CALCULUS II

Prerequisite: A score of 68% or higher in MATH 226.

INSTRUCTOR:

- Joel Feldman
- Math building room 221
- 822-5660
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- <http://www.math.ubc.ca/~feldman/>
- office hours: Monday 1:30–2:30, Tuesday 11:00–12:00, Thursday 2:00–3:00

TEXT:

Robert A. Adams and Christopher Essex, Calculus: Several Variables (or Calculus: A Complete Course) seventh edition or any earlier edition. (The earlier editions have Adams as the sole author.)

I will post all handouts, problem sets, etc. on the web at
<http://www.math.ubc.ca/~feldman/m227/>

TOPICS:

1. Curves (§11):
curves, velocity, acceleration, arc length, curvature, tangent, normal, binormal, planetary motion.
2. Vector Fields and Line Integrals (§15.1 – 15.4):
vector fields, field lines, conservative fields, line integrals.
3. Surface integrals (§15.5, 15.6):
surfaces, surface area, flux integrals.
4. Integral Theorems (§16):
gradient, divergence and curl, vector identities, divergence theorem, Green's theorem, Stokes' theorem, applications.
5. Differential forms (web notes):
General Stokes' Theorem (if time permits)

GRADING:

- There will be two midterms (tentatively scheduled for Wednesday, February 6 and Wednesday, March 6) accounting for about 40% of the final mark.
- There will be weekly problem sets accounting for about 10% of the final mark.
- The final exam will account for about 50% of the final mark.
- Grades **will** probably **be scaled**.

POLICIES:

- Students are allowed to consult one another concerning homework problems, but solutions submitted for credit must be written by the student in his or her own words. Copying solutions from another student, from the web or from any other source, and turning them in as your own is a violation of the Academic Code.
- Missing a homework or midterm results in a mark of 0, unless you have a serious *documented* reason (an illness, a death in the family, etc.).
- Missed finals are not handled by me or the Mathematics Department. Students with legitimate reasons for missing the final exam should request a “Standing Deferred” status through their Faculty.