

MATHEMATICS 317 Section 202
ADVANCED CALCULUS II

Prerequisite:

- Math 200. Math 221 is recommended.

INSTRUCTOR:

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TEXT: James Stewart, Multivariable Calculus, fourth edition.

I will post all handouts, problem sets, final grades, etc. on the web at

<http://www.math.ubc.ca/~feldman/m317/>

TOPICS:

1. Curves (§14):
curves, velocity, acceleration, arc length. Exclude curvature, normal and binormal vectors, tangential and normal components of acceleration and Kepler's laws.
2. Vector Fields and Line Integrals (§17.1, 17.2, 17.3):
vector fields, field lines (not covered well in the text), conservative fields, line integrals.
3. Surface integrals (§17.6, 17.7):
surfaces, tangent planes (also review the subsection of §15.4 entitled "Tangent Planes" and the subsection of §15.6 entitled "Tangent Planes to Level Surfaces"), flux integrals, surface area.
4. Integral Theorems (§17.5, 17.9, 17.4, 17.8):
gradient, divergence and curl (also review the subsection of §15.6 entitled "Significance of the Gradient Vector"), vector identities, divergence theorem, Green's theorem, Stokes' theorem, applications.

GRADING:

- There will be two midterms (tentatively scheduled for Monday, February 10 and Friday, March 14) accounting for about 40% of the final mark.
- There will be weekly problem sets account for about 5% of the final mark.
- The final exam will account for about 55% of the final mark.
- Grades **will** probably **be scaled**.