

GRANDE PRAIRIE REGIONAL COLLEGE
MATH 2150 A3 WINTER 2003

JAN 20 2003

Course: Intermediate Calculus II. First order and second order linear differential equations with constant coefficients. Curves, tangent lines, arc length, integration in two and three dimensions, polar, cylindrical and spherical coordinates, line and surface integrals. Green's theorem, divergence, and Stokes' theorem.

Schedule: Class: Tues., Thur. 1:00 - 14:20 M129
Seminar: Fri 11:30 - 12:20 J101

Instructor: Dr. Eric Chislett
Office C409
Phone 539-2003

Textbook: i) Calculus, Early Transcendentals, 4th Edition, James Stewart Brooks/Cole Publishing Company.
ii) Student Solutions Manual, by James Stewart, Daniel Anderson, Daniel Drucker, Brooks/Cole Publishing Company.

The course covers sections 13.6, 13.7 and chapters 10, 14, 16, 17.

Grading: Assignments 20%
Midterm Exam 30%
Final Exam 50%

Assign'ts: There will be 10 assignments given during the term, one per week. These are given out on Tues (or the previous Thur.) and are due at noon on Fridays.

Seminars: The assignments are usually finished during the seminars. But you do not have time in this one hour period to do all of an assignment.

Midterm: The Midterm Exam will be on Thur. Feb. 20

Final: The Final Exam time is set by the Registrar's office.

MATH 215 - Intermediate Calculus II

*3.0 (fi 6) (second term, 3-0-1)

Calendar description:

First order and second order linear differential equations with constant coefficients. Curves, tangent vectors, arc length, integration in two and three dimensions, polar cylindrical and spherical coordinates, line and surface integrals. Green's divergence and Stokes' theorems.

Prerequisite: MATH 214 or equivalent.

Note: This course may not be taken for credit if credit has already been obtained in MATH 209 or MATH 317.

Sections offered this term:

- (see Course Timetable)

This course is listed among the

- *prerequisites or corequisites for the courses:*
CHEM 381, 479, 481; CMPUT 304, 406, 419, 429; MAPH 343; MATH 271, 280, 311, 314, 334, 372, 373, 432; METEO 330, 331; PHYS 211, 244, 311; STAT 471.
- *requirements or recommendations of the programs:*
BA in Mathematics; BEd Major or Minor in Secondary Education; Honors or Specialization in Chemistry, Computing Science, Physical Geography, Geophysics, Meteorology, Physics, Statistics; Specialization in Mathematics, Mathematics and Economics, Mathematics and Finance, Mathematics and Statistics for Actuarial Science; Honors in Physiology.

Detailed Description:

1. First order differential equations (separable, linear, exact), linear homogeneous second order equations with constant coefficients, inhomogeneous equations (method of undetermined coefficients), applications. (2-3 weeks)
2. Curves, tangent vectors, curvature, arc length in two and three dimensions. (2-3 weeks)
3. Double and triple integrals, volumes, centroids, moments of inertia, surface area in cartesian, cylindrical and spherical coordinates.
4. Vector calculus: Vector fields, divergence, curl, line integrals, independence of path, Green's theorem, surface integrals, divergence and Stokes theorems. (3-4 weeks)

Note: We have an agreement with Physics that the material on differential equations will be covered first.

References:
