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GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE
COURSE OUTLINE

MATHEMATICS 2150 A3
WINTER SEMESTER 1994-95

TITLE: Intermediate Calculus II

SCHEDULE: Monday, Wednesday, Friday 12:00 noon - 12:50 pm
Thursday 3:00 pm - 3:50 pm

INSTRUCTOR: Dr. Subhash Karnik
Office: J 206
Phone Extension 2093

TEXT: STEWART, James: Calculus with Analytic Geometry

MARKING:

Final	35%
Mid-term Test	30%
Quizzes	20%
Review Quizzes	15%

SCHEDULE OF EXAMINATIONS :

Mid-term test : During the mid-term exam week starting Monday, February 13, 1995. The exact date to be fixed in consultation with the class.

Final Examination : As will be scheduled by Registrar's Office in April 1994.

Quizzes, term tests and the final examination must be written at scheduled times.

Attendance: In case of instances of unavoidable absence it is student's responsibility to keep track of material covered in the missed classes as also of any announcements made. Attendance record will be maintained.

Lateness: In order to avoid disruption, students are requested not to be late for classes.

Food and drink: LARGE meals are not allowed during the class time. A sandwich for survival will not be frowned at.

Quizzes: Generally, quizzes will be administered in the seminar time. Each quiz will be on the current topic usually covered by the seminar problem set.

Review Quizzes: These will be based on the review material provided from time to time. Students can expect three review quizzes during the course.

Seminars: Seminars are in essence problem solving sessions and as such are a very important part of the course. The instructor is present in the seminar to help students on Seminar Problem Sets and on material covered in classes. Students can also receive help on their assignments during the seminar time. Each instructor conducts seminars differently. An attendance record is maintained.

Experience of many years indicates that students who attend seminars, take the seminars seriously and complete the allotted practice usually do well in the course.

Homework: From time to time some home-work will be suggested from the text-book as different topics are covered. This home-work is for practice only and need not be handed in.

Notes: Take appropriate notes in the class placing a special mark or a symbol by the side of a concept or a problem that is important or difficult to understand or remember. It helps students immensely to go over the day's notes at home preferably the same day when the matter is fresh in their mind. Going over the notes passively like a novel does not do much good for the learning process. Work out some or all of the problems worked out in the class while going over the class notes. Then attempt home-work questions.

If you miss a class, it is important that you keep track of material covered in the class. One way to do this is to get class-notes from a peer who takes notes with care. Write the notes rather than xerox them. Kinesthetics of writing helps comprehension and retention. Xeroxing of notes should be resorted to only when one has run into time-management problems due to circumstances beyond one's control.

Time management: It is a good idea to apportion time for your courses in your study schedule. Definitely reserve some time for fun and re-creation activities. You need **some** relaxation for effective studying. After making a good study schedule, one must **follow** it. If a time-management problem develops during the term, re-arrange the **available time** wisely and then once again **follow the revised plan knowing that this is the best one can do** to get out of trouble. If one makes a reasonably workable time schedule and follows it, there will be most likely no occasion to re-arrange time in panic. Using a planning diary for daily activities also helps.

Quizzes and Exam Preparation: Remember that Mathematics is a sequential subject. Weakness in earlier chapters is definitely going to hinder comprehension and mastery of later material. One cannot accumulate Mathematics work and expect to do well by putting in a lot of concentrated effort just before exam. Mathematics has to be learnt in sequence and master it in sequence while proceeding at a reasonable pace.

It is beneficial to go over difficult questions in Seminar Problem Set of the week as also class notes the day (night) before the quiz day. Special notations placed at important and difficult details in your notes will facilitate preparation for quizzes and exams. The review of notes, seminar sets, assignments and home-work should also involve selected problem solving.

Finally: Everything is learnt by doing it and Mathematics is no exception to this rule. "Just do it" would be a good way to learn anything and definitely Mathematics.

Good Luck.

MATHEMATICS 2150
INTERMEDIATE CALCULUS II

MATH 2150 Intermediate Calculus II 3 (3-0-1)

PREREQUISITE : Math 2140 or equivalent

DETAILED DESCRIPTION:

Vector-valued functions. Limits, derivatives and integrals. Curvature. Tangential and Normal Components of Acceleration. Kepler's Laws.

Double integrals, areas, volumes, moments and center of mass, double integrals in polar co-ordinates.

Triple integrals, application of triple integrals, triple integrals in cylindrical and spherical co-ordinates, surface area. Vector fields, line integrals, independence of path, Green's Theorem, Surface integrals, The Divergence Theorem, Stokes' Theorem, Transformation of co-ordinates, change of variables in multiple integrals.

Separable and first-order linear differential equations, exact differential equations, homogeneous differential equations, second-order linear differential equations, Non-homogeneous linear differential equations, series solutions of differential equations.