OCT 15 1998

GRANDE PRAIRIE REGIONAL COLLEGE
MATH 1130
FALL 1998

Title: Elementary Calculus I

Prerequisite: Students with Math 30 and Math 31 background take MA 1140 while students with only Math 30 take MA 1130

Schedule:

Lecture	D2	T R	9:30 to 11:00 in J228
Seminar	DS1	T	15:00 to 16:50 in B304
	DS2	F	15:00 to 16:50 in B304

Instructor: Dallas Sawtell
Office H227
Phone 539-2989
email sawtell@gprc.ab.ca

Textbook: Stewart, Calculus 3/E (Single Variable)
Stewart, Student's Solution Manual

Grading:

Assignments (about 2)	5%
Worksheets (in the seminar)	10%
Quizzes	10%
Midterm Exam	25%
Final Exam	50%

Seminars: During the first hour, assistance in general textbook problems will be covered. During the second hour, a worksheet will be given which is to be completed and handed in at the end of the seminar period for grading.

Assignments: Assignments must be legible and answers must be presented in proper notation. No late assignments will be accepted.

Midterm: If a midterm is missed with a good reason, the weight will be put on the final. (ie. The final will be worth 75%)

Calculators: Calculators may be used in classes and seminars to check work. **No calculators will be permitted in the midterm examination and the final examination.**

Course Content: Chapters 1-5.1

Important Dates:	Sept 16	last day to drop courses without academic penalty
	Oct 12	Thanksgiving
	Oct 15	midterm 12:30 To 13:30
	Nov 4	last day to withdraw from courses with a W
	Nov 11	Remembrance Day
	Dec 4	last day of classes
	Dec 8-17	finals

This course is a requirement or recommendation for all Agriculture, Forestry and Home Economics programs; BA (formal studies option); BA Honours in Economics, Psychology; BA Major or Minor in Economics, Psychology, Mathematics; B.Comm; BEd. Major or Minor in Secondary Education; BSc Honours or Specialization in Biochemistry, Biology, Cell Biology, Cell Biotechnology, Chemistry, Computing Science, Environmental Biology, Genetics, Geography, Geophysics, Microbiology, Pharmacology, Physics, Statistics; BSc Specialization in Mathematics, Mathematics and Economics, Mathematics and Finance, Mathematics and Statistics for Actuarial Science; BSc Honours in Neuroscience, Physiology, Psychology; Preprofessional program in Optometry. (University of Alberta)

Math 1130

MA 1130 Elementary Calculus I 3 (3 - 2 - 0).

Math 30 is a pre-requisite for this course.

The following topics are covered in this course :

i) Functions and their graphs

ii) Limit of a function, Calculating Limits using the Limit Laws, Infinite Limits, Limits at Infinity, Limits of Trigonometric Functions

iii) Continuity, Intermediate Value Theorem

iv) Derivatives, Differentiation Formulas, Rules of Differentiation (Sum, Difference, Product and Quotient Rules), Derivatives of Trigonometric Functions, Chain Rule, Implicit Differentiation, Higher Derivatives, Related Rates, Differentials, Linear and Quadratic Method, Newton's Method, Rates of Change in Natural and Social Sciences

v) Maximum and Minimum Values, Mean Value Theorem, Increasing and Decreasing Functions, First Derivative Test, Concavity and Points of Inflection, Second Derivative Test, Horizontal and Vertical Asymptotes, Curve Sketching, Applied Maximum and Minimum Problems, Applications to Economics, Anti-derivatives

vi) Sigma Notation, Area, Definite Integral, Fundamental Theorem of Calculus, Substitution Rule, Areas between Curves.