GRANDE PRAIRIE REGIONAL COLLEGE
Department of Science
MATHEMATICS 1130 A2
Fall 2009

Title :   **Elementary Calculus I**

Schedule : Lecture   A2   W   F   13:00 - 14:20   J202
**   Seminar   AS1   R   14:30 - 16:20   J202**
**   AS2   T   14:30 - 16:20   J226**

Instructor : Thomas Kaip
**   Office J212**
**   Phone 539 - 2963**
**   e-mail : kaip@gprc.ab.ca**

Textbook :   i) Calculus, 9th Edition, Anton-Bivens-Davis

**   Course is covered by Chapters 1 to 6.1 from i).**

Grading :   Quizzes   20 %
**   Mid-term Exam   30 %**
**   Final Exam   50 %**

Calculators: No calculators allowed in Quizzes and Exams

Turn over . . .

Course Description

MA 1130 3 (3 - 2 - 0) UT 75 Hours

Pure Math 30 is a pre-requisite for this course.

(Credit will be granted for only one of MA 1130, MA 1140 or MA 1000.)

The following topics are covered in this course :

i)   Functions and their graphs

**ii)   Limit of a function, Calculating Limits using the Limit Laws, Limits of
Trigonometric Functions**

iii)   Continuity

**iv)   Derivatives, Differentiation Formulas, 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, Limits at Infinity, 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.**