

**GRANDE PRAIRIE REGIONAL COLLEGE
MATH 1130 B2 - FALL 1998**

OCT 15 1998

Title : Elementary Calculus I

Schedule : Lecture B2 M W F 10:00 a m - 10:50 a m J203
Seminar BS1 M 3:00 p m - 4:50 p m J204
BS2 R 3:00 p m - 4:50 p m J204

Instructor : Dr. Subhash Karnik
Office J206
Phone 539 - 2093
e-mail : karnik@gprc.ab.ca

Textbook : i) Single Variable Calculus, 3rd Edition, James Stewart
Brooks/Cole Publishing Company
ii) Student Solutions Manual, Volume One
By James Stewart, Daniel Anderson, Daniel Drucker
Brooks/Cole Publishing Company

Course is covered by Chapters 1 to 5.1 from i).

Grading : Quizzes/Assignments 15 %
Worksheets in Seminars 10 %
Mid-term Exam 25 %
Final Exam 50 %

Exam Schedule : Mid-term Exam Thursday, October 15, 1998
12 : 30 p m - 1 : 30 p m

Final Exam as per Registrar's Schedule to be published in November 1998.

Students must write the Exams at the scheduled times.

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.