

SEP 06 2000

**GRANDE PRAIRIE REGIONAL COLLEGE
MATH 1130 A3 - WINTER 2000**

Title : Elementary Calculus I

Schedule : Lecture A3 M W F 10:00 a m - 10:50 a m J203
Seminar AS1 T 2:30 p m - 4:20 p m J203
AS2 R 2:30 p m - 4:20 p m J203

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

Textbook : i) Single Variable Calculus, 4th Edition, James Stewart
Brooks/Cole Publishing Company
ii) Student Solutions Manual, Volume One (Optional)
By James Stewart, Daniel Anderson, Daniel Drucker
Brooks/Cole Publishing Company

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

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

Exam Schedule : Mid-term Exam Wed, February 16, 2000 (Tentative)
10 : 00 a m - 10 : 50 a m

Final Exam as per Registrar's Schedule to be published in April 2000.

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.