

**GRANDE PRAIRIE REGIONAL COLLEGE**  
**MATH 1130 A3 - Winter 2003**

**Title :** Elementary Calculus I

<b>Schedule :</b>	Lecture A3	T	R	8:30 a m - 9:50 a m	J203
	Seminar AS1	M		2:30 p m - 4:20 p m	J204
	AS2		W	2:30 p m - 4:20 p m	J204

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

**Textbook :** i) Single Variable Calculus, 4<sup>th</sup> Edition, James Stewart  
 Brooks/Cole Publishing Company  
 ii) Student Solutions Manual, Volume One for the above book  
 (Optional)  
 By Daniel Anderson, Jeffery A Cole, Daniel Drucker  
 Brooks/Cole Publishing Company

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

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

**Exam Schedule :** Mid-term Exam - Thursday February 20, 2003 (Tentative)  
 8:30 a m - 9:20 a m

Final Exam as per Registrar's Schedule to be published in April 2003.

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, 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.