GRANDE PRAIRIE REGIONAL COLLEGE

MATHEMATICS 1130 D2 FALL 2007-COURSE OUTLINE

Title: Elementary Calculus 1

Schedule: Lecture D2   W F 1:00 pm—2:20 pm J226
**   Seminar DS1   T 2:30 pm—4:20 pm J226**

Instructor: Tom McLeister
**   Office C204**
**   Phone 539-2989**
**   e-mail tmcleister@gprc.ab.ca**

Textbook: Calculus , 8th Edition, Anton, Bivens and Davis
**   Wiley**
**   The course covers chapters 6 to 6.1 of the text.**

Grading : Quizzes	**15%**
Seminar Assignments	**10%**
Mid-term Exam	**25%**
Final Exam	**50%**

Quizzes will be held weekly at the beginning of the Friday lecture period, and seminar assignments will be written weekly during the second half of the seminar period.

Exam Schedule: Mid-term Exam – Wednesday, October 24, 2007 (tentative) 1:00 pm – 2:20 pm
**   Final Exam as per Registrar's Schedule to be published in December 2007**

Course Description

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

Pre-requisite: Pure Math 30

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

Transfers:

Athabasca	**MATH 265(3)**	**Concordia UC**	**MAT 113(3)**
Canadian UC	**MATH 1xx(3)**	**U of A**	**MATH 113(3) or AUMAT 110**
King's UC	**MATH 200(3)**	**U of L**	**MATH 1560(3)**
U of C	**MATH 251(3)**		

The following topics are covered in this course:

   i)   **Review of algebra, analytic geometry and trigonometry**
   ii)   **Functions and their graphs**
   iii)   **Limit of a function, calculating limits using limit laws, limits of trigonometric functions**

iv)   **Continuity**

v)   **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**

vi)   **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**

Sigma notation, area, Definite Integral, Fundamental Theorem of Calculus, Substitution Rule, areas between curves

The use of calculators is not permitted in this course.