

GRANDE PRAIRIE REGIONAL COLLEGE
MATHEMATICS 1000
FALL 1996

Title:	Calculus I		
Schedule:	Lecture	A2	M W F 09:00 to 09:50 in J202
		AS1	R 16:00 to 17:50 in J201
		AS2	F 16:00 to 17:50 in J202
Instructor:	Thomas Kaip Office J212 Extension 2963		
Textbook:	Stewart, Calculus (Early Transcendental) 3/E		
Grading:	Assignments	10%	
	Worksheets	10%	
	Maple Lab Examination	5%	
	Midterm Examination	25%	
	Final Examination	50%	
Assignments:	There will be 5 assignments given throughout the term.		
Seminars:	During the first hour, a worksheet will be given which is to be completed and handed in at the end of the hour period for grading. During the second hour, exercises related to maple software will be covered. At the end of the term, there will be a maple lab examination.		
Midterm:	The Midterm Examination will be given during the week of October 13-19.		
Final:	The Final Examination will be set by the Registrar's Office.		
Calculators:	Calculators may be used in classes and seminars to check work. No calculators will be permitted in the midterm examination and the final examination.		

Mathematics 1000

Prerequisite: Mathematics 30 and 31.

Note: This course is restricted to Engineering students. This course may not be taken for credit if credit has already been obtained for Math 1130 or Math 1140.

Course Contents

- Review.
- Inequalities, functions, and review of trigonometry, rectangular and polar coordinates, basic graphs.
- Limits: definition, limit theorems, continuity, Intermediate Value and Extreme Value Theorems.
- Derivatives: definition, geometric and physical interpretations, higher order derivatives, partial derivatives, rates of change.
- Chain rule, trig derivatives, implicit differentiation, related rates.
- Differentials, Taylor polynomials, Newton's method.
- Mean Value Theorem, Rolle's Theorem, Extreme values.
- Curve sketching.
- Exponential functions, growth and decay, inverse functions.
- Hyperbolic functions, Cauchy Mean Value Theorem, L'Hospital's Rule.
- Summation notation, the Riemann Integral, Numerical Integration.
- Fundamental Theorem of Calculus, Properties of the Integral, integral as area, Indefinite Integral.
- U-substitution, Mean Value Theorem, Average value.