DEPARTMENT OF SCIENCE

COURSE OUTLINE – FALL 2012
MA 1130 A2
ELEMENTARY CALCULUS I

INSTRUCTOR: Thomas Kaip **PHONE:** (780) 539-2963

OFFICE: J218 **EMAIL:** tkaip@gprc.ab.ca

OFFICE HOURS: W 9:30 - 11:30
F 11:30- 12:30

PREREQUISITE: Pure Mathematics 30

REQUIRED TEXT/RESOURCE MATERIALS:

Stewart: Single Variable Calculus, 7E, Brooks/Cole 2012.

CALENDAR DESCRIPTION:

The course will include a review of analytic geometry; functions, limits, continuity; differentiation of elementary functions; applications to maxima, minima and rates; introduction to integration; Fundamental Theorem; numerical integration; and areas and other applications of the definite integral to areas.

CREDIT/CONTACT HOURS: 3 (3-2-0) UT

DELIVERY MODE(S):

Lecture:	W F	13:00-14:20	J226
Seminars:	T	14:30-16:20	J202
	R	14:30-16:20	J202

COURSE OBJECTIVES:

- State the definition of a function and describe the various ways a function can be represented;
- Find the domain and range of a function;
- Compose functions;
- Calculate limits of functions, including rational and trigonometry functions, using the limit laws;
- Identify points or intervals where a function is continuous/discontinuous;
- Calculate derivatives of functions using the limit definition and the differentiation rules;
- Estimate the value of a function at a point using the tangent line (linear) approximation or differentials;
- Calculate derivatives implicitly and solve related rates problems;
- Sketch the graph of a function and indicate the extreme values, points of inflection, vertical and horizontal asymptotes, and intervals of concavity;
- Apply calculus to solve optimization problems;
- Calculate definite integrals using Riemann sums and the Fundamental Theorem of Calculus;
- Calculate definite and indefinite integrals using tables of integrals and substitution;
- Use the definite integral to find the area between curves.

TRANSFERABILITY:

UA, UC, UL, AU, GMU, Other. Consult the Alberta Transfer Guide for more information.

Note: Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.

GRADING CRITERIA:

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	**4-point Equivalent**	**Percentage Guidelines**	**Designation**
A^{+}	**4.0**	**90 – 100**	**EXCELLENT**
A	**4.0**	**85 – 89**	
A^{-}	**3.7**	**80 – 84**	**FIRST CLASS STANDING**
B^{+}	**3.3**	**77 – 79**	
B	**3.0**	**73 – 76**	**GOOD**
B^{-}	**2.7**	**70 – 72**	
C^{+}	**2.3**	**67 – 69**	**SATISFACTORY**
C	**2.0**	**63 – 66**	
C^{-}	**1.7**	**60 – 62**	
D^{+}	**1.3**	**55 – 59**	**MINIMAL PASS**
D	**1.0**	**50 – 54**	
F	**0.0**	**0 – 49**	**FAIL**
WF	**0.0**	**0**	**FAIL, withdrawal after the deadline**

EVALUATIONS:

Assignments: 10%

Quizzes: 15%

Midterm: 25%

Final Exam: 50% (Cumulative and scheduled during exam period, TBA)

Note: There will be no make-up quizzes or exams. If a quiz/test is missed for a valid reason and proper documentation is provided, then the weight of the quiz/test will be transferred to another component. Late assignments will not be accepted.

STUDENT RESPONSIBILITIES:

Attend all lectures and seminars. If a lecture or seminar is missed, it is the student's responsibility to catch up on the material and obtain the missing lecture notes.

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the Student Conduct section of the College Admission Guide at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week	Topics	Notes
1. Sept. 3-7	Precalculus Review	First class: Fri, Sept. 7
2. Sept. 10-14	Functions, Limits & Continuity §1.1-1.6,1.8	
3. Sept. 17-21		
4. Sept. 24-28		
5. Oct. 1-5	Differentiation §2.1-2.9	
6. Oct. 8-12		Thanksgiving, Monday Oct. 8 – no classes
7. Oct. 15-19		
8. Oct. 22-26	Applications of Differentiation §3.1-3.5,3.7 §3.8 (optional)	**Midterm**
9. Oct. 29-Nov.2		Nov. 2, last day to withdraw
10. Nov. 5-9		Remembrance Day, Spring Break, Nov. 9 – 13, no classes
11. Nov. 12-16	Integration §3.9,4.1-4.5	
12. Nov. 19-23		
13. Nov. 26-Nov. 30		
14. Dec. 3-7	Applications of Integration/Review §5.1	
15. Dec. 13-22		Final Exams