DEPARTMENT OF SCIENCE

COURSE OUTLINE – FALL 2011
MA 1130 D2
ELEMENTARY CALCULUS I

INSTRUCTOR:	Brian Redmond, Ph.D.	**PHONE:**	(780) 539-2093
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OFFICE HOURS: T R 14:00 – 16:00

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:	8:30-9:50	T R	J227
Seminar:	14:30-16:20	W	J226

COURSE OBJECTIVES:

At the end of this course, students should be able to…

- 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, etc. Transfers to other institutions: 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%   (Tuesday, October 25, 2011)

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/**

**Note: all Academic and Administrative policies are available on the same page.

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week	Topics	Notes
1. Sept. 5-9	Precalculus Review	First class: Thurs. Sept. 8
2. Sept. 12-16	Functions, Limits &	
3. Sept. 19-23	Continuity	
4. Sept. 26-30	§1.1-1.6,1.8	
5. Oct. 3-7	Differentiation	
6. Oct. 10-14	§2.1-2.9	Thanksgiving, Monday, Oct. 10 – no classes
7. Oct. 17-21		
8. Oct. 24-28	Applications of	**Midterm (Tues. Oct. 25th)**
9. Oct. 31-Nov.4	Differentiation §3.1-3.5,3.7	Nov. 2, last day to withdraw
10. Nov. 7-11	§3.8 (optional)	Remembrance Day, Friday, Nov. 11 – no classes
11. Nov. 14-18	Integration	
12. Nov. 21-25	§3.9,4.1-4.5	
13. Nov. 28-Dec. 2		
14. Dec. 5-9	Applications of Integration/Review §5.1	
15. Dec. 12-21		Final Exams