



DEPARTMENT OF SCIENCE
COURSE OUTLINE – FALL 2011
MA 1130 A2
ELEMENTARY CALCULUS I

INSTRUCTOR: Thomas Kaip **PHONE:** (780) 539-2963
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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. 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
9. Oct. 31-Nov.4	Differentiation	Nov. 2, last day to withdraw
10. Nov. 7-11	§3.1-3.5,3.7 §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