DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2014
MA 1130 A3
ELEMENTARY CALCULUS I

INSTRUCTOR: Tom McLeister **PHONE:** (780)539-2961

OFFICE: J212 **E-Mail:** tmcleister@gprc.ab.ca

OFFICE HOURS: M, T, R, F 10:00—12:00

PREREQUISITE: Mathematics 30-1 or equivalent

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:		08:30 – 09:50	T R	J227
Seminar:	AS1	14:30-16:20	M	J229
	AS2	14:30-16:20	R	J204

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:

University of Alberta *, University of Calgary *, University of Lethbridge *, Athabasca University * Augustana Faculty, University of Alberta *, Concordia University College, Canadian University College, Grant MacEwan University, King's University College.
Other (transfers in combination with other courses or to other institutions) (From the GPRC catalog)

* An asterisk (*) beside any transfer institution indicates important transfer information. Consult the Alberta Transfer Guide.

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**	**95 – 100**	**EXCELLENT**
A	**4.0**	**90 – 94**	
A^{-}	**3.7**	**85 – 89**	**FIRST CLASS STANDING**
B^{+}	**3.3**	**80 – 84**	
B	**3.0**	**75 – 79**	**GOOD**
B^{-}	**2.7**	**70 – 74**	
C^{+}	**2.3**	**66 – 69**	**SATISFACTORY**
C	**2.0**	**62 – 65**	
C^{-}	**1.7**	**58 – 61**	
D^{+}	**1.3**	**55 – 57**	**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% (Thursday, Feb. 27, 2014)

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.

ASSIGNMENTS: There will be take-home assignments to be handed in for grading roughly every week.

SEMINARS: Students will spend (most of) each seminar period working on their assignments; frequently, I will spend a few minutes at the beginning of the seminar reviewing precalculus material relevant to the current assignment.

QUIZZES: Quizzes will be held roughly every other week.

FINAL EXAM: The final exam will be written during the exam period, between April 16 and April 28 inclusive (except for Good Friday, April 18) including Saturdays and evenings. It is the student's responsibility to be available to write the exam at the scheduled time. Writing early is not permitted.

CALCULATORS: Use of calculators is not permitted on the quizzes or exams.

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/Text Sections	Notes
1. Jan. 7-10	Inequalities, Intervals Appendix A	
2. Jan. 13-17	Analytic Geometry Appendices B,C Functions §1.1,1.2,1.3	
3. Jan. 20-24	Limits & Continuity §1.4, 1.5, 1.6,1.8	
4. Jan. 27-31		
5. Feb. 3-7	Differentiation §2.1-2.9	
6. Feb. 10-14		Winter Break Feb. 17-21
7. Feb. 24-28		**Midterm Exam Thurs. Feb 27**
8. Mar. 3-7	Applications of Differentiation §3.1-3.5,3.7 §3.8 (time permitting)	**Mar. 7, last day to withdraw**
9. Mar. 10-14		
10. Mar. 17-21		
11. Mar. 24-28	Integration §3.9,4.1-4.5 Areas between curves §5.1	
12. Mar. 31-Apr.4		
13. Apr. 7-11		
14. Apr. 14		Apr. 14, last day of classes
Apr. 16-28		**Final Exams** Apr. 18 Good Friday-college closed