



DEPARTMENT OF SCIENCE
COURSE OUTLINE –Winter 2013
MA 1130 A3
ELEMENTARY CALCULUS I

INSTRUCTOR: Thomas Kaip **PHONE:** (780) 539-2963
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OFFICE
HOURS: T 1:00 - 2:20
 R 1:00 - 2:20

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: | T R | 8:30-09:50 | J202 |
| Seminars: | M | 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 | 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 | 63 – 65 | |
| 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:

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|--------------|--|
| 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/