DEPARTMENT OF SCIENCE

COURSE OUTLINE – Winter 2018

MA1130 C3: Elementary Calculus I – 3 (3-2-0) UT

75 Hours for 15 Weeks

INSTRUCTOR: Reddy Ganta **PHONE:** 780-539-2850
OFFICE: J220 **E-MAIL:** Rganta@GPRC.ab.ca

OFFICE HOURS: TBA

CALENDAR DESCRIPTION: The course will cover 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.

PREREQUISITE: Mathematics 30-1 or equivalent

REQUIRED TEXT/RESOURCE MATERIALS:
Open (free) textbook at www.lyryx.com. Calculus: Early Transcendentals by David Guichard.

DELIVERY MODE(S):	Lecture:	**W, F**	**13:00-14:20**	**J202**
	Seminar:	**R**	**14:30-16:20**	**J202**

COURSE OBJECTIVES: This introductory calculus course is designed to introduce some basic mathematical tools and their applications.

LEARNING OUTCOMES:
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;
- Identify and sketch standard algebraic, exponential, logarithmic, trigonometric and piecewise defined functions;
- Find the domain and range of a function;
- Apply transformations of functions (shift, stretch and reflect) and combine functions by the standard arithmetic operations;
- Compose functions;
- Calculate limits of 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, horizontal and oblique 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)

You may also check: http://www.transferalberta.ca or http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2

** 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**

EVALUATIONS:

- Worksheets 10%
- Quizzes 15%
- Midterm 25%
- Final Exam (cumulative) 50%

GRADING CRITERIA:

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Ch1. PreCalculus Review, Sections 1.1, 1.2

Ch.2 PreCalculus Review, Section 2.1

Ch3. Limits & Continuity, Sections 3.1, 3.3, 3.4, 3.6, 3.7

Ch4. Differentiation, Sections 4.1-4.7

Ch5. Applications of Differentiation, Sections 5.1-5.4.1, 5.6, 5.7

Ch6. Integration, Sections 6.1-6.3

Ch7. Integration, Section 7.1

Ch8. Applications of Integration, Sections 8.1, 8.2

STUDENT RESPONSIBILITIES: Students are required to attend classes (lectures and seminars). Missed quizzes or tests will result in mark of zero unless the student provides a valid reason in which case weight will be added to final. No calculators, cellphones, notes or textbooks are allowed during the exams. **Cell phones are to be turned off and not used during class.**

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 http://www.gprc.ab.ca/about/administration/policies/

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