MATH 1115, Elementary Calculus II

3 Credits, 3 hours lecture

Course Description

This course is an extension of MATH 1113, involving a study of the elementary transcendental functions and of further techniques and applications of integration. Topics include exponential and logarithmic functions, trigonometric and inverse trigonometric and further applications of integration, L'Hopital's rule and improper integrals.

Pre and Co-requisites

MATH 1113

Course Learning Outcomes (CLOs)

Upon successful completion of the course, the student shall be able to:

CLO1: Recognize when a function is invertible and compute the derivative of the inverse function by relating it to the derivative of the original function.
CLO2: Recognize indeterminate forms of limits and manipulate these expressions to a form in which L'Hôpital's rule can be used to evaluate the limit.
CLO3: Evaluate integrals using a variety of integration techniques including substitution, integration by parts, trigonometric substitution, partial fractions, and approximation via the Midpoint Rule, the Trapezoidal Rule, and Simpson's Rule.
CLO4: Express and evaluate areas, volumes, surface area, arc length, and other amounts using integrals.
CLO5: Illustrate how differential equations model natural phenomena and predict the behavior of the model by solving (or approximating a solution to) these equations.
CLO6: Apply convergence/divergence tests to study sequences and series.
CLO7: Create a Taylor/Maclaurin series representation of a function and employ it to solve problems regarding the function.

Evaluation

Assessment Type	Percentage
Assignments (At-home, In-class, etc.)	8%
Term Tests (Midterms, Quizzes, etc.)	42%
Final Exam	50%

Course Completion Requirements

Minimum passing mark of 50% or D is required. Note: A C- is required to use this course as a prerequisite for subsequent courses or to often transfer this credit successfully to other institutions. It is the student's responsibility to be aware of their specific program requirements.

Grading Scale

4.0 Grade Scale	Alpha Grade	Percentage Grade
4.0	A+	93-100
4.0	A	85-92.9
3.7	A-	80-84.9
3.3	B+	77-79.9
3.0	B	74-76.9
2.7	B-	70-73.9
2.3	C+	67-69.9
2.0	C	64-66.9
1.7	C-	60-63.9
1.3	D+	55-59.9
1.0	D	50-54.9
0.0	F	0-49.9

Land Acknowledgement

We respectfully acknowledge that Keyano College is located on Treaty 8 territory, the traditional & contemporary meeting grounds and gathering places of the Denesuline, Cree and Métis Peoples of this region. Our name, Keyano (kiyânaw in nêhiyawêwin - Cree language), translates to “we, us, our” and speaks to the connection we have as a community and our commitment to being in right relationships with the First Peoples of these lands.

Course Outline Review Date: June 2025