

**Fond du Lac Tribal and Community College  
COURSE OUTLINE FORM**

Updated 11/25/14

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: \_\_\_\_\_

2. Date submitted: \_\_\_\_\_

3. Date approved: Fall 1997 Date revised 05/13/15

4. Department/discipline: Mathematics

5. Department(s) endorsement(s): \_\_\_\_\_

(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Calculus: Short Course

Abbreviated course title (25 characters or less): \_\_\_\_\_

7. Course Designator: MATH

8. Course Level: 1020

9. Number of Credits: Lecture 3

Lab \_\_\_\_\_

10. Control Number (on site) 35

Control Number (online) \_\_\_\_\_

11. Catalog/Course description:

A brief survey of calculus; Students will review real numbers, graphing, and functions. Core material includes limits, continuity, differentiation and integration. Applications of differentiation include minimizing/maximizing cost, profit, and revenue functions. Students will learn applications of the integral with respect to the physical, social, and behavioral sciences and use exponential and logarithmic functions to explore growth, decay, and population models. Students planning to enroll in more than one semester of calculus should begin with MATH 2001. (Prerequisites MATH 1010, placement by Accuplacer, or instructor consent.)

12. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s): MATH 1010 College Algebra, placement by Accuplacer or instructor consent

Co-requisite:

13. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

1) Textbook: Suitable textbooks are usually titled "Calculus: A Short Course" or "Calculus for Social Science, Biological Sciences, and Business". Calculus with polynomials, exponential, and logarithmic functions is featured, but trigonometry is usually omitted.

2) Graphing Calculator

14. **Course Content** (Provide an outline of major topics covered in course)

1. Review of algebra.
2. Introduction to limits and differentiation.
3. Applications of differentiation.

4. Fundamental theorem of calculus.
5. Integration techniques.
6. Exponential and logarithmic functions.
7. Applications of integration.
8. Introduction to multivariable calculus.

**15. Learning Goals, Outcomes, and Assessment**

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Course Learning Outcomes will fulfill the identified competencies.

Course Learning Outcomes

Upon completion of this course, the student will be able to:

1. Calculate limits and apply differentiation techniques to a variety of functions.
2. Solve applications that require differentiation.
3. Demonstrate the Fundamental Theorem of calculus.
4. Apply integration techniques to a variety of functions.
5. Analyze exponential and logarithmic functions.
6. Solve applications that require integration.
7. Demonstrate multivariable calculus techniques.

**16. Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See [www.mntransfer.org](http://www.mntransfer.org)

Goal Area(s): \_\_\_\_\_