**LAKE MICHIGAN COLLEGE**COURSE SYLLABUS

**I. Course Identification**

 Discipline: Mathematics

 Title & Number: Calculus I, Math 151

 Credit Hours: 5

 Contact Hours: 5

 Instructor: Aurora Burdick

Course Hours: Monday/Wednesday: 6:00 pm – 8:40 pm

 Telephone: 269-473-2140 (leave a message and a call-back number)

 E-mail (preferred): aburdick@homeoftheshamrocks.org

 Prerequisites: Math 128/130 or 135 (or equiv) or placement score

**II. Textbooks and/or Equipment/Supplies**

 Required Items: Calculus Early Transcendentals(Single Variable) 2nd edition,

by Briggs, Cochran, Gillett

 Graphing calculator. In class I will use a TI calculator.

Recommended: Student Solutions Manual for the above.

**III. Course Description from Catalog**

Study of calculus of single variable. Topics include limits, derivative and integral properties of algebraic functions and elementary applications of derivatives and integrals.

**IV. General Education Requirements**

 ***Communications***: Express ideas both verbally and in writing; demonstrate the ability to

understand written, visual, and spoken communications; convey purpose, meaning, and main ideas effectively to individuals and groups.

 ***Critical Thinking***: Identify central issues and assumptions in an argument, recognize

important relationships, locate additional information sources, make reasonable inferences from data, deduce conclusions from data or information, interpret whether conclusions are warranted on the basis of the data analyzed, and evaluate evidence and authority.

***Mathematics***: Represent and solve problems using mathematical techniques.

 Demonstrate an awareness of the usefulness of mathematics in society.

***Science***: Demonstrate how basic principles of science apply to life and an

understanding of our universe. Apply the methods of scientific inquiry and research to problem solving.

 1. Communication: A – E

 2. Critical Thinking: A – E

 3. Mathematics: A – E

 4. Science: A – E

**V. Goals and Objectives**

Upon Course completion, students should be able to:

1. Understand the rate of change of a function
2. Work with the coordinate system, lines and equations, functions and graphs
3. Define and calculate the rate of change of a curve
4. Define limit and continuity
5. Specify the main properties of a continuous function
6. Understand the rules of differentiation
7. Calculate the derivative of polynomial and trigonometric functions
8. Use the product, quotient, and power rules
9. Compute derivatives using implicit differentiation
10. Use the chain rule where applicable
11. Define and use the differential of a function
12. Apply the derivative
13. Apply the derivative to the graphs of functions
14. Use differentiation to locate extrema of a function
15. Use derivatives in applied problems
16. Know and use the Mean Value Theorem and its consequences
17. Understand integration
18. Define and compute indefinite integrals (antiderivatives)
19. Define and compute definite integrals
20. Know and use the Fundamental Theorem of Calculus
21. Apply integrals
22. Use subdivision and refinement to compute definite integrals
23. Recognize and solve problems that lead to integral solution

**VI. Expected Student Outcomes**

During the semester, you may be asked to participate in ungraded Assessments of

 Student Learning Activities. Your instructor will use the information that you provide to

 better gauge your comprehension of course materials and as appropriate, will modify

how course material is presented in order to better prepare you to successfully complete

 graded assignments.

**VII. Instructional Methodology**

The methods of instruction used throughout this course include lecture/discussion, group work, written exercises, computer-aided instruction, handouts, and classroom question and answer.

**VIII. Writing Across the Curriculum Strategy**

Students will be required to write problem solutions in a logically ordered and cohesive manner.

**IX. Grading Criteria and Requirements**

 A. Homework problems:

After we cover each section in class you will be given some exercises from the text. You are expected to work through these problems and be ready to discuss them the next class period, but they will not be collected or graded. Periodically you will be given “take-home quizzes” typically these will be due the next class period; these assignments will be collected and graded. At the end of the term the total of all your graded HW assignments with the lowest score dropped will count the same as one chapter exam score.

B. Exams:

You will be given in class exams at the end of each chapter, 4 in total. Chapter exams will be taken outside of class time in the assessment center

C. Comprehensive Final Exam

The last class of the semester you will be given a comprehensive final exam over all the material that we have covered. The final exam will be worth 25% of your total grade.

D. Computation of Final Grade

The four chapter exams and the HW total (with lowest HW dropped) are the five midterm scores. The five midterm scores and the comprehensive final will be weighted as follows:

The best four scores 70% of your total grade

The lowest score 5% of your total grade

Comprehensive Final Exam 25% of your total grade

**X. Grading Scale**

 90 - 100% A

 80 - 89 B

 70 - 79 C

 60 - 60 D

 0 - 59 E

**XI. Make-up Policy**

Late Work: I will not accept any late assignments. You may be able to make arrangements to take a test early, but **never late**. Your lowest HW score will be dropped. If you miss more than one HW, you may have a bigger problem that needs to be addressed. You should consider seeing a college counselor for this.

**XII. Attendance Policy/Withdrawal Policy**

1.Attendance:

Two weeks of consecutive absences or failure to attend 20% of the classes subjects a student to dismissal. Consult the policy in the college catalog.

 *You are expected to read the text, do all assigned problems, and attend*

 *class. Tests and homework are based on the lectures, may cover material*

 *not in the text, and may cover problems not in the homework. As a result,*

 *attendance is necessary for good performance.*

You need to study at least 2 hours for every hour in class; that is, you will need to study at least 5 hours for every 2.5 hour class period. Five hours will not be enough for many students.

 2. Withdrawal:

 The LMC policy for withdrawal is described in the current College catalogue.

 Official withdrawal from a class will result in a grade of “W” on the student’s transcript. A “W” grade will not be computed in the LMC GPA.

3. Academic dishonesty:

Dishonest student activity (eg cheating on an exam) will not be tolerated and will result in failure of specific assignments or the entire course. Flagrant and/or repeated violations of Academic Honesty will result in disciplinary action up to and including expulsion from Lake Michigan College.

Course Schedule: Note that the schedule is subject to change based upon the dynamics of the class and the best interests of the students.

W Sep 9 Chapter 1.1-4 (review)

M Sep 14 Chapter 2.1-2

W Sep 16 Chapter 2.3-4

M Sep 21 Chapter 2.5-6

W Sep 23 Chapter 2.7

M Sep 28 Review for test

W Sep 30 Test Chapter 2

M Oct 5 Chapter 3.1-2

W Oct 7 Chapter 3.3-4

M Oct 12 Chapter 3.5-6

W Oct 14 Chapter 3.7-8

M Oct 19 Chapter 3.9-10

W Oct 21 Chapter 3.11

M Oct 26 Test Chapter 3

W Oct 28 Chapter 4.1-2

M Nov 2 Chapter 4.3-4

W Nov 4 Chapter 4.5-6

M Nov 9 Chapter 4.7-8

W Nov 11 Chapter 4.9

M Nov 16 Test Chapter 4

W Nov 18 Chapter 5.1-2

M Nov 23 Chapter 5.3-4

W Nov 25 *No class: Thanksgiving*

M Nov 30 Chapter 5.5

W Dec 2 Review for test

M Dec 7 Test Chapter 5

W Dec 9 Review for final

M Dec 14 Review for final

W Dec 16 Final Exam