LAKE SUPERIOR STATE UNIVERSITY

College of Innovations and Solutions   **Fall 2024**
MATH152 Calculus II (4,0)   **4 Credits**

Prerequisites: Two years of high school algebra, one year of plane geometry, one semester of high school trigonometry, and MATH151 Calculus I with a C or above, or the equivalent.

Instructor(s): George Voutsadakis, CAS 206E, 906-635-2667, gvoutsad@lssu.edu

Office Hours:

Monday	Tuesday	Wednesday	Thursday	Friday
2:00 - 2:50	2:00 - 2:50	2:00 - 2:50	2:00 - 2:50	2:00 - 2:50

Required Texts: Rogawski, J. (2012). *Calculus: Early Transcendentals*, 2nd Ed. Freeman and Company. ISBN: 9781429208383.

Recommended Text: None

Course Description: Applications of the definite integral. Techniques of integration and improper integrals. Infinite Series. Conic sections, polar coordinates and parametric equations.

Course Objectives: At the conclusion of MATH152 students should be able to:

1. Apply *integration* and numerical methods to find area, volume and length.
2. Use *advanced integration techniques* such as integration by parts, partial fractions, trigonometric substitution, division, and integration of improper fractions.
3. Solve first order *differential equations*.
4. Identify the basic types of *infinite series*; verify the convergence of infinite sequences and series; find the radius of convergence for a given series; and apply differentiation and integration techniques to infinite series.
5. Use basic concepts of *analytic geometry*, including the geometric properties of conic sections to sketch graphs and find formulas; convert between rectangular and polar coordinates; use polar coordinates to find arc length and area; and compute tangents and arc lengths and graph parametric curves.
6. Create and solve *mathematical models* using integration, differential equations and infinite series.

Grading Scale and Policies:
Point and Percentage Values:

Quizzes	100 points	25%
Exams	200 points	50%
Final Exam	100 points	25%
	Total 400 points	Total 100%

Grading Scale: **A** 90-100 (includes +/-) **B** 80-89 **C** 65-79 **D** 50-64 **F** 0-49

Grading Policies: You will be graded on correct methodology, i.e., if you provide an answer but show no work or your work is incorrect, you will receive no credit. Your solutions must be written in a connected, step-by-step logical fashion and all variables should be clearly defined. If your solution is not written clearly, you will not receive full credit. In many cases, setting up the correct mathematical model and using this model to solve a problem will be just as important as computing a numerical answer.

The homework exercises for each section covered are on the last page of this handout. You should spend a lot of your math study time doing homework. If you are struggling with your homework seek help from your instructor or the tutors in the Learning Center.

*Ground Rules***:**

1. Calculator: The TI-83/84 Plus is the recommended calculator for this course. Your instructor reserves the right to ask you to solve problems in class, during quizzes and during exams without the use of a calculator. **All other electronic devices (computers, PDAs, cell phones etc.), must be turned off during lecture sessions.**
2. Purpose of Lecture: Lectures are an opportunity for students to ask questions and seek clarification on material. This implies student preparation has been accomplished prior to class. Lecture is also the opportunity for the instructor to coordinate coverage of the material and present material that is historically or potentially difficult. It does not negate student preparation or study.
3. Attendance Policy: Attendance is strongly encouraged. If you miss a class, or are late, you are still responsible for class notes and assignments. Moreover, **you will be assigned a 0 score should a quiz take place during that missed lecture**.
4. Make-up Policy: Each exam should be taken at the designated time. An exam may be taken prior to or after the scheduled date, by agreement with the instructor, provided that the student provides a request with a **documented valid excuse well in advance of the scheduled date**. **If an absence is unexcused, no make-up will be provided, either for exams or for quizzes**.
5. Academic Integrity: Students are expected to perform all assigned work themselves. Any form of cheating or plagiarism will be handled in accordance with the Academic Integrity Procedures. Violations of the University Academic Integrity Policy may result in an F course grade.
6. Testing: Use of head phones, cell phones and hats during exams is prohibited.

University Policies and Statements:

Online and Blended Course Attendance Policy
Students in online or blended classes are required to log in to the Course Management System (Moodle) and complete at least one "Academic Related Activity" within the Add/Drop period.

The Americans with Disabilities Act & Accommodations
Lake Superior State University is committed to following the requirements of the Americans with Disabilities Act Amendments Act and Section 504 of the Rehabilitation Act. This university is also dedicated to providing equal opportunity for participation in all programs, services and activities. If you are a student with a disability or think you may have a disability, please contact Accessibility Services, KJS Library #233, (906) 635-2355, accessibility@lssu.edu to discuss your request further. Once you have registered with Accessibility Services, students should contact their instructor as early as possible for assistance with classroom accommodations.

Academic Success Center
To support you on your academic path, the Academic Success Center (ASC) is free for all students and is located on the main floor of the library. The ASC offers walk in sessions for the math center, consultations with the

writing center, and tutoring sessions by appointment. In addition, many classes offer supplemental instruction, which are group sessions tailored to your course content. Contact the Academic Success Center at academicsuccess@lssu.edu to set up an appointment

Laker Success
The Laker Success program is designed to help you gain control over your learning through proactive communication and goal setting, through the development of learning skills and study habits, and through personal accountability. The Laker Success staff is committed to working with students to develop an individualized plan to achieve academic and personal goals. Students can initiate contact with Laker Success on their own via email at lakersuccess@lssu.edu or by visiting the Student Engagement Center in Cisler Center, Room 100. Students may be also directed to Laker Success by their advisor, by an instructor, by the Scholastic Standards / Financial Appeals Committees, or by the Provost's Office. If at mid-term your grades reflect that you may not attain a passing grade in one, some, or all of your classes, a Laker Success staff member will contact you. You may email lakersuccess@lssu.edu if you want to sign up early in the semester or if you have questions or concerns.

Add/Drop Policy
Courses can be added or dropped through Anchor Access until the sixth day of the semester (fourth day for the Summer semester). After this date, students need the instructor's permission to add a course. For additional details about add/drop or withdrawal, go to:
https://www.lssu.edu/registrar/scheduling/adddrop-courses-withdrawal-information/

Related dates for this semester can be viewed at: https://www.lssu.edu/registrar/important-dates/

Tentative Course Outline

Week	Dates	Monday	Tuesday	Thursday	Friday
1	08/26	6.1	6.2	6.2	6.3
2	09/02	BREAK	6.3	6.4	6.4
3	09/09	6.5	7.1	7.1	7.2
4	09/16	7.2	7.3	Review	Exam 1
5	09/23	7.5	7.5	7.6	7.6
6	09/30	8.1	8.1	8.2	8.3
7	10/07	8.4	9.1	Review	Exam 2
8	10/14	BREAK	9.1	10.1	10.2
9	10/21	10.3	10.3	10.4	10.5
10	10/28	10.5	10.6	10.6	10.7
11	11/04	10.5	10.6	Review	Exam 3
12	11/11	10.7	11.1	11.1	11.2
13	11/18	11.3	11.3	11.5	11.5
14	11/25	Review	Exam 4	BREAK	BREAK
15	12/02	11.5	Review	Review	Review

Assignments

Section	Exercises
5.6	1-71 (every other odd), 79, 83, 87, 89
5.7	1-69 (every other odd)
6.1	1, 3, 5, 11, 13, 15, 21, 25, 29, 31
6.2	1, 5, 9, 13, 25, 29, 33, 35, 43, 55
6.3	3, 9, 15, 19, 23, 31, 35, 47
6.4	1, 3, 5, 9, 11, 21, 23, 25
6.5	1,2, 3, 5, 13, 15, 17, 19
7.1	1, 3, 5, 11, 13, 15, 19, 23, 27, 43, 49
7.2	1, 3, 5, 9, 11, 13, 47, 51, 53
7.3	1, 3, 5, 7, 15, 19, 23, 29, 37, 41
7.5	5, 7, 8, 9, 11, 15, 17, 21, 29, 31, 35
7.6	1, 5, 9, 11, 19, 23, 27, 33, 37, 45, 53, 55, 61
7.8	7, 11, 15, 17
8.1	5, 7, 9, 11, 13, 33, 35, 37
8.2	1 a, d, 5, 7, 11, 15
8.3	1, 5, 9, 11, 15, 21, 29, 31
8.4	1, 3, 7, 13, 15, 21, 23, 25, 27, 33, 35
9.1	1, 2, 3, 5, 7, 10, 13, 15, 19, 23, 29, 31, 35, 39, 47, 49, 53, 54
10.1	1, 2, 3, 7 , 13, 17, 19, 25, 29, 31, 35, 41, 47, 49, 51, 61, 67, 69
10.2	1 3, 5, 7, 11, 13, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37
10.3	1-77, every other odd (or every odd, for more practice)
10.4	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31
10.5	1, 3, 7, 11, 13, 17, 37, 39, 41, 45
10.6	1, 3, 7, 9, 13, 17, 23, 29, 33, 35, 37, 39, 45, 46
10.7	1, 3, 5, 7, 9, 11, 13, 15, 19, 21, 25, 27, 29, 31, 35, 37, 49, 51, 53, 55
11.1	1, 3, 5, 7, 11, 15, 19, 23, 25, 31, 33, 39, 49, 51, 53, 55
11.2	1, 3, 5, 7, 15, 17
11.3	1, 3, 5, 11, 15, 24, 27, 50, 51
11.4	1, 3, 5, 7
11.5	1, 3, 5, 11, 13, 15, 17, 21, 25, 33, 37