NORTHWEST
MISSOURI STATE UNIVERSITY
MARYVILLE | KANSAS CITY

Department of Mathematics and Statistics

Calculus II

MATH 17121, 48 contact hours, 3 credit hours

5-Week Summer Session

Instructor: TBA
E-mail: TBA
Office Hours: By appointment

Prerequisites: Math 17120 or consent of instructor

Textbook and supplementary materials: Calculus, Stewart, 8th ed, 2016, Cengage Learning

Course description: Topics include further applications of integration techniques, an introduction to multivariate topics, sequences and series.

Student learning outcomes: After completing Calculus II, students should be able to:

1. Analyze and solve problems involving volumes of solids of revolutions, volumes of solids of uniform cross-section, arc length, surfaces of revolution, and work.
2. Compute integrals of elementary functions using the techniques of integration (parts, partial fractions, etc.), tables and computer algebra systems.
3. Approximate the value of a definite integral.
4. Understand and apply techniques used to determine the convergence/divergence of an infinite series or sequence.
5. Understand and apply techniques used to calculate or estimate the sum of an infinite series
6. Find the Taylor series of a given function and determine its interval of convergence.
7. Understand and carryout basic vector operations in the plane and three dimensions.
8. Understand and calculate the dot product and cross product of vectors (calculating torque).
9. Understand, calculate and use/interpret simple partial derivatives.
10. Understand, calculate and use linear approximations and differentials.
11. Understand, calculate and use/interpret directional derivatives and the gradient vector.

Assessment methods: Each outcome will be assessed through Exams and/or Homework/Problem/Quiz

Instructional methods: This course will be delivered fully online, and all instructional methods and assessments outlined as follows will be adapted to this format on Canvas. A variety of instructional techniques will be employed, including lectures, class discussions, small group work, individual/ group work, and learner presentations. Each student is encouraged to read the textbook material to be covered during the class period before it is covered in class, as much of the class discussion will be initiated by student questions, and good preparation allows for more in-class tin1e for discussion and problem solving.

Graded course requirements:

        Homework/Problems/Quizzes   Exams (7 @ 12% each)

Grading scale: The course grade will be assigned using the following scale: 90% - 100% = A, 80% - 89% = B, 70% - 79% = C, 60% - 69% = D, below 60% = F

Course outline/major topics studied: Applications of integration, techniques of integration, differential equations, infinite sequences and series, vectors and the geometry of space, and partial derivatives.

Chapter	Section	Exam	Schedule
6	1, 2, 3, 5	1	
7	1, 2, 3, 4, 5, 6, 7, 8	2	
8	1, 2		
9	1, 3	3	
11	1, 2, 3, 4, 5, 6, 7	4	
11	8, 9, 10, 11	5	
12	1, 2, 3, 4, 5, 6	6	
14	1, 2, 3, 4, 5, 6, 7	7 (final exam)	

Notes:
1. In section 7.2, students should be familiar with integrating $\sin^2 x$, $\cos^2 x$, $\tan^2 x$, $\csc^2 x$, $\sec^2 x$, and $\cot^2 x$.
2. In section 7.7, students should be familiar with Simpson's Rule.
3. In section 12.6, students should be familiar with ellipsoids.
4. Course schedule is subject to change with instructor notification and students will be responsible for abiding by these changes.

Attendance: Students are expected to attend all classes as specified in the course syllabi for each course. It is the responsibility of the student to promptly notify his or her instructor when unable to attend class. Please refer to the university policy on attendance at https://www.nwmissouri.edu/policies/academics/Attendance.pdf

Final exams: If an emergency occurs that prevents the administration of a course scheduled final examination, the final course grades will be calculated based on the work in the course completed to that point in time and the faculty member's considered judgment. Final exams will not be rescheduled, and a grade of "I" will not be given as a result of an institutional cancellation of a final examination. This final exam policy does not apply to online courses.

Administrative drop: An instructor may request the Office of the Registrar delete a student from a course roster if the student has not met the prerequisite for the course as stated in the catalog, or as a result of non-attendance in the course.

Academic integrity policy: The students, faculty, and staff at Northwest endeavor to sustain an environment

that values honesty in academic work, that acknowledges the authorized aid provided by and intellectual contributions of others, and that enables equitable student evaluation. Please refer to Northwest Missouri State University's Academic Integrity Policy at http://www.nwmissouri.edu/policies/academics/Academic-Integrity.pdf

Non-discrimination and anti-harassment policy: Northwest Missouri State University is committed to maintaining an environment for all faculty, staff, students, and third parties that is free of illegal discrimination and harassment. Please refer to the Non-Discrimination and Anti-Harassment Policy at http://www.nwmissouri.edu/diversity/titlevi.htm

Family Education Rights and Privacy Act (FERPA) policy: Family Educational Rights and Privacy Act of 1974, as amended (commonly known as the Buckley Amendment), is a federal law which provides that colleges and universities will maintain the confidentiality of student education records. Please refer to the Family Educational Rights and Privacy Act (FERPA) Policy at http://www.nwmissouri.edu/policies/academics/Family-Educational-Rights-and-Privacy-Act.pdf

Disclaimer: The course instructor reserves the right to adjust this syllabus upon subsequent consideration of student performance, schedule constraints, unexpected semester events, and other such situations. If changes are required, they will be posted on course web site and announced in class.