



NORTHWEST
MISSOURI STATE UNIVERSITY
MARYVILLE | KANSAS CITY

Department of Mathematics and Statistics

Calculus III

MATH 17321, 48 contact hours, 3 credit hours
5-Week Summer Session

Instructor: TBA
Email: TBA
Office hrs: By appointment

Prerequisites: A minimum grade of 'C' in Math 17121 or consent of instructor

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

Course description: Topics include polar and parametric equations, additional multivariate topics, vector valued functions, and vector analysis.

Student learning outcomes: This course is designed to introduce the student to the algebra, mathematical theories, terminology, techniques, and models of functions of several variables. Competency in the material will enhance the student's ability to reason mathematically, solve problems, work applications, and work geometrically and analytically with functions of several variables. After completing Calculus III, students should be able to:

1. Recognize and formulate problems and solutions within a real world situation, and to model them using the language and tools of Calculus. In particular, a study of vector methods will be used to model real life problems in motion and physical dynamics and rudimentary methods of differential equations and integration techniques will be used to develop mathematical approximations to physical problems.
2. Integrate several concepts in mathematics in order to formulate solutions to diverse and complex mathematical and physical problems. These problems arise naturally within the contexts of vector mechanics; including vector algebra, vector calculus, vector gradients, and motion models of velocity and acceleration.
3. Develop a proficiency of differential and integral calculus not only in the one-dimensional sense, but also in the multidimensional sense.

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 time for discussion and problem solving.



Graded course requirements:

Homework/Problems/Projects/Labs/Quizzes	35%
Exams (3 @ 15% each)	45%
Final Exam	20%

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:

Chapter	Section	Exam	Major Topics
10	1, 2, 3, 4		Parametric Equations and Polar Coordinates
12	6	1	Vectors and Geometry of Space
13	1, 2, 3, 4		Vector Functions
14	5, 6, 7	2	Partial Derivatives
15	1, 2, 3, 5, 6, 7, 8, 9	3	Multiple Integrals
16	1, 2, 3, 4, 5	4(Final Exam)	Vector Calculus

Note: 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 every class meeting. If a class is missed, it is the responsibility of the student to learn of any announcements made in class, obtain all handouts passed out in class, or to get with the instructor at the earliest possible time to make up a missed assignment. **If the student cannot be present at the time of a quiz or test, he/she must notify the professor in advance so that other arrangements can be made. If the student does not notify the professor in advance (directly, email, voice mail, or through the math department) and/or does not have a reasonable excuse, they WILL NOT be allowed to make up the quiz or test.** Please refer to the university policy on attendance at <https://www.nwmissouri.edu/policies/academics/Attendance.pdf>

Code of Academic integrity: 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>

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

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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.

Administrative Withdrawal Policy – see link below to read full policy.

<http://nwmissouri.smartcatalogiq.com/2019-2020/Undergraduate-Catalog/Policies-and-Regulations/Academic-Policies/Adding-Dropping-and-Withdrawals>

University communications: Students are expected to use their Northwest student email account for any electronic correspondence within the university. Students are also strongly advised to check their email and CatPAWS accounts on a regular basis.

Special accommodations policy: Northwest Missouri State University complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 [ADA] and the ADA Amendments Act of 2008 [ADAAA]. If a student has a disability that qualifies under the ADA/ADAAA and requires accommodations, they should contact the Office for Equity and Accessibility for information on appropriate policies and procedures at 660.562.1639, or pjp@nwmissouri.edu / ADA@nwmissouri.edu. For the university policy on disability accommodation refer to <http://www.nwmissouri.edu/policies/student/Disability-Accommodation.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>

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