

MA265 CALCULUS III

Northern Michigan University
Roxin Zhang
Fall 2024

MA265 SYLLABUS

Class Meeting Hours

- ▶ Monday, Wednesday, Thursday, Friday
- ▶ 12:00 – 12:50 PM, New Jamrich Building 3313

Instructor

- ▶ Roxin Zhang
- ▶ Office: New Jamrich 2208
rzhang@nmu.edu

Office Hours

MWRF 11:00 – 11:50 AM

Computer and Calculator Requirements

- ▶ Maple installation

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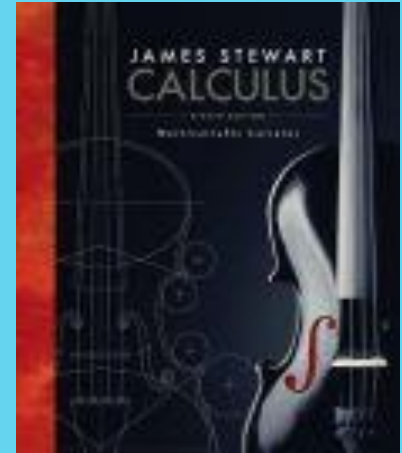
Prerequisite

- ▶ A C- or better from MA163.

Text Book

Multivariable Calculus (9e)

by James Stewart



Students are required to purchase Cengage WebAssign Access (it is set up as First Day).

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Homework Assignments

- ▶ Section homework are given through WebAssign.
- ▶ The homework assignments on WebAssign are graded and scores will contribute into the final grade.
- ▶ Assignment problems are given by sections and have due dates (normally one-week but try to finish early).
- ▶ Homework problems can be reattempted up to 5 times within the due dates. Extensions on due dates can be granted under special circumstances upon requests.
- ▶ The scores of homework based on (a) how many problems attempted; (b) how many attempts needed to complete.

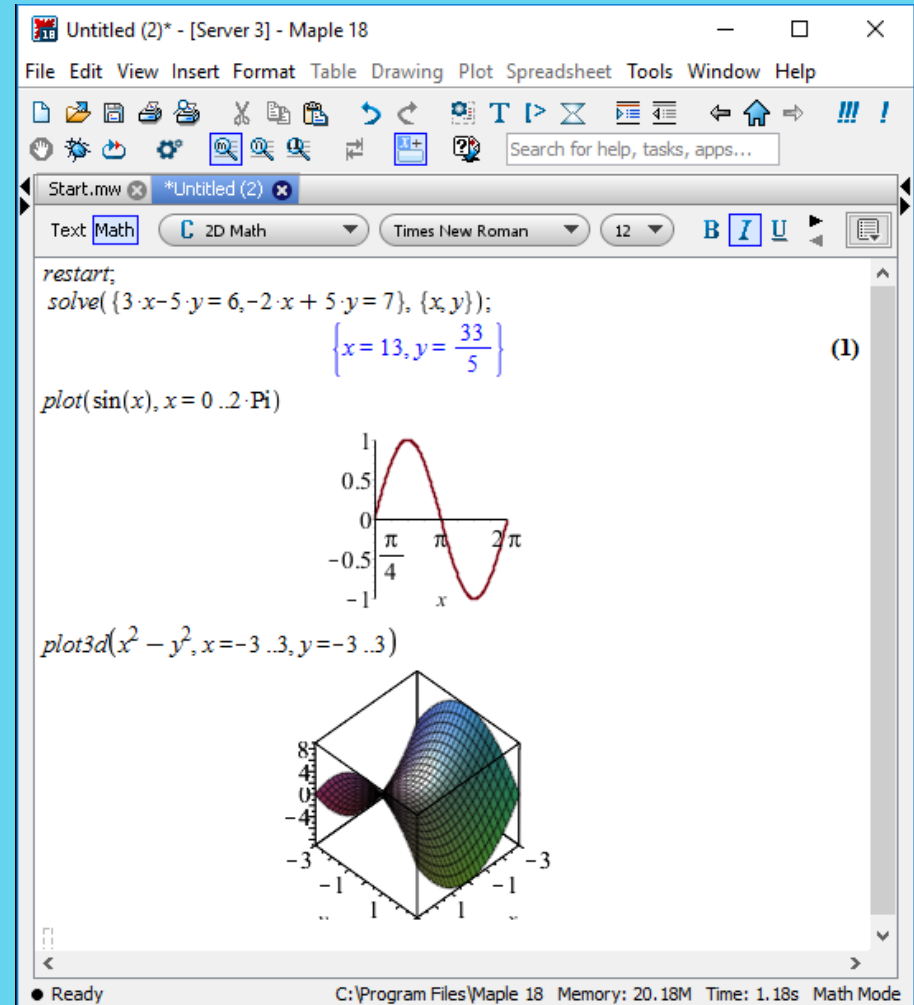
Classroom Attendance

- ▶ Class attendance is required and will be calculated into grades.

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Computer and Program Requirement

- ▶ Students should install Maple on their computer.
- ▶ To install Maple you need go to Academic Computing.
- ▶ Here is a screenshot of Maple.
- ▶ Use of Maple or not for a test will be specified on the test.



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Tests and Quizzes

- ▶ About 6 biweekly quizzes (drop one lowest quiz).
- ▶ The final exam, check NMU website Final Exam Schedules
- ▶ All quizzes and the final exam are open notes and may involve the use of a computer program. Quizzes are timed for one hour and the final exam is two hours. You need to review homework assignments and lecture to prepare for quizzes. Review quizzes for the final exam.

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Grading

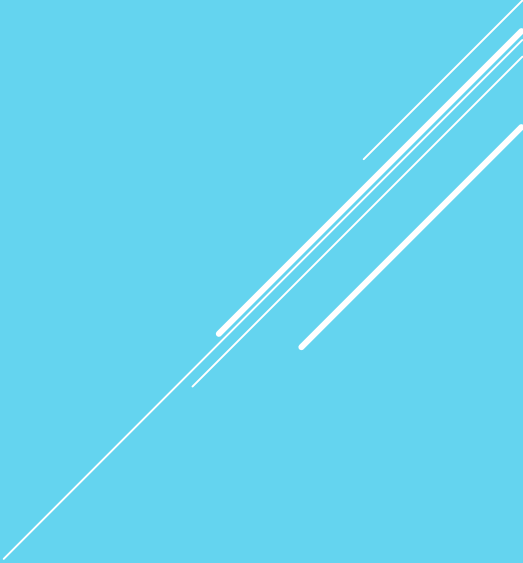
- ▶ Homework Assignments 28%
- ▶ Quizzes 50%
- ▶ Final Exam 20%
- ▶ Attendance 2%

Grading convention

95%	A		70%	C+
90%	A-		65%	C
85%	B+		60%	C-
80%	B		55%	D+
75%	B-		Etc.	

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In this course, our main focus is on multivariable calculus – calculus for functions involving more than one variables. Topics includes:

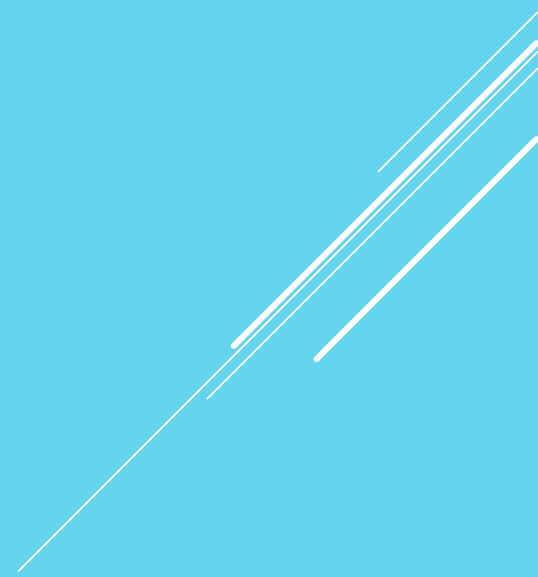
- ▶ Vectors in the plane and in space, space analytical geometry;
 - ▶ Vector functions and motion, surfaces, coordinate systems;
 - ▶ Functions of two or three variables, their derivatives and integrals in various coordinate systems;
 - ▶ Maxima and minima of functions, and applications;
 - ▶ Vector analysis
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Learning Outcomes

Upon completion of this course, student should be able to

- ▶ Understand the analytical and geometric properties of multivariable functions, vectors, and vector functions.
- ▶ Comprehend the geometric meanings of mathematical forms in 3D space and higher dimensions.
- ▶ Perform calculus calculations, including derivatives, integrations and limits of functions in space.
- ▶ Use space calculus to solve large classes of mathematical, geometrical and application problems. Many times the calculations can be completed with much less steps compared to the approaches without calculus.
- ▶ Modeling related application problems with multivariable calculus.
- ▶ Learn the basic concepts of vector analysis including line integrals, potential functions, Green's Theorem, curl and so on.

CHAPTERS COVERED

- ▶ Chapter 12
Vectors and the Geometry of the Space
 - ▶ Chapter 13
Vector Functions
 - ▶ Chapter 14
Partial Derivatives
 - ▶ Chapter 15
Multiple Integrals
 - ▶ Chapter 16
Vector Calculus
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DISABILITY SERVICES

- ▶ If you have a need for disability-related accommodations or services, please inform the Coordinators of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1737 or disability@nmu.edu). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.
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