

# Math 241 Calculus III

Thomas Honold



ZJU-UIUC Institute



Fall Semester 2021

Administrative  
Things

Introductory  
Remarks

Real Vectors and  
Vector Spaces

The Field of Real  
Numbers

## 1 Administrative Things

## 2 Introductory Remarks

Real Vectors and Vector Spaces  
The Field of Real Numbers

# Today's Lecture: Introduction

## Teaching Staff

### Lecturer

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# Weekly Timetable

## Lecture A

Mon/Wed/Fri 10-11  
East Hall (2C-108/116)

## Lecture B

Mon/Wed/Fri 11-12  
East Hall (2C-108/116)

## Discussion Sessions

Wed, 18–20 (9 groups)

## Homework

Homework is assigned on Wednesdays and must be handed in on the next Wednesday before the respective discussion session. Late homework will not be accepted.

## Textbook

[Ste16] James Stewart, *Calculus: Early Transcendentals*, 8th edition, **metric version**, Cengage Learning, 2016

Other editions of Stewart's book will not be supported.

For the Linear Algebra “crash course” during the first 3 course weeks we won't have a dedicated textbook, but I can recommend the following book (mainly the material in Part I) as a good reference:

[Rob11] Lorenzo Robbiano, *Linear Algebra for Everyone*, Springer 2011

For those who want a more textbook-style introduction, TA's have recommended the following:

[NM17] Daniel Norman, Dan Wolczuk, *Introduction to Linear Algebra for Science and Engineering*, 2nd Edition, Pearson Education 2012

# Course Contents (tentative)

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Week	Topics	[Ste16] Sections
1,2,3	Linear Algebra Basics	12.1–12.6 + other sources
4	Vector Functions	13.1–13.4
5,6,7	Partial Derivatives	14.1–14.8
8,9,10	Multiple Integrals	15.1–15.10
11,12,13,14	Vector Calculus	16.1–16.9

The lecture won't follow the textbook strictly (regarding notation, mathematical depth, and invoking tools from Linear Algebra).

# Examination Regulations

## Calculation of the final score

40 % final exam (closed book)

30 % 3 midterm exams (closed book),  
score weights 10% + 20% + 10%

20 % homework

10 % discussion session work

The total midterm score (30) will be computed as

$$\max \{ b + c, a + b/2 + c, a + b \},$$

where  $a (\leq 10)$ ,  $b (\leq 20)$ ,  $c (\leq 10)$  denote the individual midterm scores. (In other words, the bottom 25 % of the total midterm score is discarded.)

Midterm dates will be fixed in due course.



# Course Website

# Blackboard

# Some Advice Before We Start

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- Attend each class!
- Solve (well, at least try hard to solve) each exercise!
- Don't hesitate to ask (stupid) questions!
- Don't take everything in the textbook too literally!