UPPSALA UNIVERSITET
MATEMATISKA INSTITUTIONEN
Lauri Viitasaari

Multivariate calculus M
Spring 2022

Multivariate calculus

The course is lectured by Lauri Viitasaari (`lauri.viitasaari@math.uu.se`).

Questions related to administration
If you have any questions related to registering for the course or for the exam, date of the exam e.g. other questions related to course administration at department of mathematics, contact `studexp@math.uu.se`

Homepage
All updated information can be found through studium `https://uppsala.instructure.com/courses/55343`.

Literature
Jonas Månsson & Patrik Nordbeck, *Flerdimensionell analys*, Textbook.
Jonas Månsson & Patrik Nordbeck, *Övningar i Flerdimensionell analys*, Exercise book.
Finding the course book is not mandatory: all the necessary material will be discussed during the lectures and exercise sessions.

Content
We will roughly go through the entire content of the book.

Teaching
The teaching consist of 35 lectures and 20 exercise lessons (small adjustments possible). During the lectures we go through the theory with some examples, while the exercise lessons are devoted to problem solving. Lectures and exercise sessions are given in hybrid format (both via zoom and in the classroom) unless otherwise specified (adjustments possible depending on the situation and possible new restrictions).
Zoom link `https://uu-se.zoom.us/j/67326167824`.

Examination
The course is examined with a written final exam worth of 10 credits. The exam consists of 8 problems, worth 5 points each. The date for the exam will be announced later.

You may earn extra points (6 in total) by solving optional home works given

during the course. However, you need to pass the course with the exam, and the extra points are only taken account after that. The following grading is applied:

Grade 5: 32–40, Grade 4: 25–31, Grade 3: 16–24, Grade U: 0–17.

Assignments
There will be three optional home assignments. Each assignments consists of a set of exercises. You can earn extra points by solving the exercises and submitting your solutions. Each assignment is worth 2 points, giving 6 extra points in total from three assignments.
The assignments will be handed as pdf-files during the course.

Extra resources
The following video series is recommended by other readers and students. However, remember that one cannot replace one's own work by watching movies!
Travis Kowalski: `https://www.youtube.com/playlist?list=PLE7F8F33E161D1425`

Study tips and schedule
Feel free to ask questions during, between, and after the lectures via zoom, in person, or via email. Discuss also with your classmates!

We follow roughly the following schedule (changes and adjustments possible due to course):

Preliminary schedule	
Lecture	Book chapter
1	1.1., 1.2., 1.4.
2	2.1.
3	2.2.
4	2.3.
5	3.1.
6	3.2.
7	3.3., 3.4.
8	4.1.
9	4.2., 4.3.
10	4.4.
11	4.5., 4.6.
12	4.7.
13	5.1., 5.2., 5.3.
14	5.4.
15	6.1., 6.2., 6.3.
16	6.4.
17	6.5.
18	7.1.
19	7.2.
20	7.3.
21	7.4., 7.5.
22	7.6.
23	8.1.
24	8.2.
25	8.3., 8.4.
26	9.1.
27	9.2.
28	9.3.
29	9.4.
30	9.5.
31	10.1
32	10.2
33	10.3.
34	Summary
35	Summary

Exercise sessions (lektion)
In the exercise sessions we solve problems together. The problems of each session are related to the lectures before the session. Details on the particular problems are provided beforehand, and it is strongly recommended to look at the problems in advance!

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