Calculus II (MATH 102)
Sabancı University, Summer 2020-2021
This syllabus may be subject to update and change.

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Class Hours and Lecture Format: Lectures will be live-streamed (Wednesday, Thursday and Friday). You will find a link to access them on SUCourse+. In order to have access to them, you must be logged in with your Sabancı account.

The online lectures will be made available afterwards, so that you can also watch them at a later time. They are going to be published on SUCourse+. We will also share some optional material for you on SUCourse+ to read or watch before/after the lectures. You will find a tentative breakdown of material at the end of the syllabus.

Lecture Hours: Wednesdays 09:40 – 11:30, Thursdays 10:40 – 13:30, and Fridays 10:40 – 12:30.

Recitation Hours: Thursdays 19:40 – 21:30 and Fridays 16:40 – 19:30

You are responsible for every announcement made in the online lecture or in SUCourse+. Not attending the online lecture or not following SUCourse+ regularly is not an excuse, in case you miss something.

Aim of the Course: We hope to gain an understanding of:
- Improper integrals,
- Sequences and series, approximation of functions by series,
- Functions of several variables,
- Differentiation of functions of several variables,
- Optimizing functions of several variables,
- Integrating functions of several variables,
- Various coordinate systems if time allows.

Learning Outcomes: On completion of this course the student should be able to:
1. Understand the idea of integration over unbounded intervals and compute them
2. Define the notion of convergence of series and use various tests to determine series convergence
3. Find Taylor representations of functions and approximate functions via Taylor polynomials
4. Understand and use the concept of a function of several variables, draw graphs in 3 dimensional spaces
5. Use the properties of vectors and operations with vectors
6. Compute partial derivatives, directional derivatives and write equations of tangent planes to surfaces
7. Apply partial derivatives to find and test local extrema
8. Evaluate double integrals in Cartesian and polar coordinates and triple integrals in Cartesian coordinates

Textbook: Calculus Early Transcendentals 2nd Edition (Global Edition), Briggs, Cochran & Gillett.

Recitations: Recitations will consist of three parts: TAs solving problems, discussing the worksheet with the TA and the quiz.

- **Problem Solving**: The TA will solve a few questions from the textbook at the beginning of the recitation.

- **Worksheets**: The worksheet problems will be published on SUCourse+ on the recitation days after the lecture. You are supposed to work on the problems before the recitations, discuss your solutions with your peers and assistants during the recitation and then upload your own solutions on SUCourse+. We will review your solutions and provide feedback individually.

- **Quizzes**: There will be short quizzes at the end of the Friday recitations.

Grading: Your grade exclusively depends on the following listed items. The details of each item are below.

Midterm (August 4)	30%
Final Exam	35%
Lecture Attendance	5%
Recitation Attendance	5%
Recitation Worksheets	10%
Recitation Quizzes	15%

There will be no extra-credit opportunities.

IMPORTANT:
Every document that requires a student submission, needs to be in *pdf* format, hand-written and to have name, surname, student ID, and signature on the top left corner of the document, on each page submitted (note: if you write on the two sides of a piece of paper, write the information on both sides).
Any page missing any of these information will be completely ignored.

Exams: These are tests performed via SUCourse+, online proctored and recorded. Questions can be presented in different ways, including the submission of hand-written answers. During their entire duration, your webcam and microphone should be on. In the case of non-compliance with this and other declared exam procedures, your exam will be void. Make sure to check that your webcam and microphone function properly before the exam. More details are announced on SUCourse+.

Exams Make-up Policy: If you miss an exam and wish to make it up, you must contact the instructor by mail, and explain your excuse as soon as possible. Only students that had contacted the instructor with a valid excuse will be contacted to arrange the terms of the exam. The make-up will contain all topics and it will be a recorded oral interview, scheduled during the final period.

Lecture Attendance: Attendance during the lectures will be taken via *Zoom* registration with SU email.

Recitation Attendance: Attendance during the recitations will be taken during the worksheet hour via Zoom registration with SU email account. In order to be counted as present in the recitations, students must be online and active.

You must attend the synchronous *Zoom* lectures, recitations, etc. and real-time online exams with your SU email account.

Recitation Worksheets: The worksheet of the recitation will be published on SUCourse+ on the same day as the recitation after the lecture. Solutions are to be submitted on SUCourse+ before the deadline. There will be no make-up for missed worksheets. We will drop the worst 20% scores. More details will be announced on SUCourse+.

Recitation Quizzes: There will be a short quiz on Fridays, at the end of the recitation. Questions can be presented in different ways, including the submission of hand-written answers. During the entire duration of each quiz, students are proctored and recorded. There will be no make-up for missed quizzes. The best 4 of your quiz scores (out of 6) will determine the quiz grade. More details will be announced on SUCourse+.

NA Policy: Students missing both the midterm and the final, without a valid excuse, may receive NA.

Academic Integrity: All university policies on academic integrity apply to our course, and they will be enforced (more information on http://www.sabanciuniv.edu/en/academic-integrity-statement).

In particular, no form of cheating is welcome in the exams or quizzes, such as copying whole or part of each other's answers. Students are not allowed to give or receive outside help. The action against such violations could range from getting a zero on the particular quiz/exam to explaining the case in front of the Disciplinary Committee.

In quizzes or exams, if we suspect any breach of academic integrity, we may ask for an oral validation of the quiz/exam. In this case the student will be invited to an oral interview and will be given the opportunity to explain their solution. If the student cannot provide sufficient explanations, or does not show up to the interview, their quiz/exam grade will be replaced with zero (0).

Class Discipline: It is our responsibility to provide students with excellent teaching and learning environments. We are therefore asking you to respect both our responsibility to teach and the right of other students to learn. Any action that disturbs your classmates or disrupts the online activities is unacceptable. Repeated violations of the above common sense rules may cause a student to be counted as absent for a lecture or a recitation.

Suggestions:

- Feel free to ask us and your assistants questions via e-mail.

- Remember that you do not have to be a math genius to be successful in this course (although it wouldn't hurt!). Regular study habits are sufficient to get a decent grade.

- Studying out of class for this course should become a routine. Key to success in mathematics is practice.

- Scientific WorkPlace / NoteBook (SWP / SNB) is a math software package available at Information Technology website for download. You are welcome to use it for your self-study.

Below is a tentative breakdown of topics. The order in the tentative schedule might be altered. It is your responsibility to follow the lecture notes posted on SUCourse+.

Lecture	Topic (Sections from the textbook)
Lecture 1	7.8 Improper integrals
Lecture 2-3	8.1-8.3 Sequences, infinite series
Lecture 4	8.4 The divergence and integral tests
Lecture 5-6	8.5-8.6 The ratio and alternating series tests
Lecture 7	9.1-9.4 Power series, Taylor series
Lecture 8	11.1-11.3 Vectors, dot product
Lecture 9-10	11.4, 12.1 Cross product, planes and surfaces
Lecture 11	12.2, 12.3 Level curves, limits and continuity
Lecture 12-13	12.4, 12.5 Partial derivatives, chain rule
Lecture 14	12.6, 12.7 Directional derivatives, gradient, tangent planes
Lecture 15-16	12.8 Maximum/minimum problems,12.9 Lagrange multipliers
Lecture 17	13.1-13.3 Double integrals
Lecture 18	13.4-13.5 Triple integrals