

This syllabus is subject to change in unforeseen circumstances.

Calculus II (MATH 102 A, B)
Sabancı University, Fall 2022-2023

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Coordinator: Gamze Kuruk
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Class Hours: (Sec A) Mon 11:40 - 12:30 (SBS 1099), Tue 09:40 - 11:30 (FENS G077)
(Sec B) Mon 16:40 - 17:30 (FENS G077), Tue 14:40 - 16:30 (FENS G077)

Recitation Hours: Fri 8:40 - 10:30 (A1 - A6), Fri 10:40 - 12:30 (B1 - B5), Fri 13:40 - 15:30 (C1 - C5).

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

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

Aim of the Course: We hope to gain an understanding of:

- 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.

You will find a tentative breakdown of material at the end of the syllabus.

Learning Outcomes: On completion of this course the student should be able to:

1. Define the notion of convergence of series and use various tests to determine series convergence
2. Find Taylor representations of functions and approximate functions via Taylor polynomials
3. Understand and use the concept of a function of several variables, draw graphs in 3 dimensional spaces
4. Use the properties of vectors and operations with vectors
5. Compute partial derivatives, directional derivatives and write equations of tangent planes to surfaces
6. Apply partial derivatives to find and test local extrema
7. Evaluate double integrals in Cartesian and polar coordinates and triple integrals in Cartesian coordinates

Recitations: Each recitation will consist of the following activities

Problem solving on the white board (TA/LA or students).

Group-study: Students will discuss and solve problems from a given worksheet in groups.

Discussion: Students are urged to ask questions during recitations.

Quiz questions will usually be similar to the problems in the online homework or in the group-study worksheets.

Grading: Your grade exclusively depends on the below listed items. There will be no other extra-credit opportunities.

Midterm I	25%
Midterm II	25%
Final	25%
Recitation Grade	20%
Lecture Attendance	5%
Online Homework (requires MyLab account)	5%

Exams: The midterms will be on the below listed dates and times. More detailed information will be available in due time.

Midterm I	05.11.2022, Saturday, time TBA
Midterm II	10.12.2022, Saturday, time TBA

The university will later announce the final exam date. The final may be given on any day between January 7th - 20th 2023. Student Resources will determine the dates and times for all final exams, and instructors cannot change it. The last day for grade submissions is January 26, so do not plan to leave Istanbul before January 26, 2023. We will not accommodate travel arrangements, or other personal business.

Midterms and Final Make-up Policy: If you miss a midterm or the final and wish to make it up, you must contact Gamze Kuruk by mail, and explain your excuse **before the exam begins**. If it is a health problem you need to bring a doctor's report, which must be given or checked by SU Health Center within 3 days of the date of the report. Make-up for the midterms or the final will be at the end of the semester (after the finals period ends). Only students that had contacted the coordinator with a valid excuse will be informed about the exact time and place. The make-up exam will contain all topics.

Recitation Grade: This consists of quiz scores and recitation attendance. There will be a quiz every week, at the end of the recitation. The quiz will be worth 4 points, and the attendance will be worth 1 point, for a total of 5 points.

Attendance in recitations will be checked in every recitation. **To be counted as present, you need to attend both hours.** If you are more than 10 minutes late, you will not be allowed to sign the attendance sheet for that hour. Students who do not attend both hours of the recitation will not get the attendance point.

There will be absolutely no make-up for missed recitations/quizzes. Instead, the best 8 of your recitation scores will determine the Recitation Grade. Thus, no medical reports or official permission notices from the university will be accepted. You are required to attend your registered recitation section; otherwise your recitation score will not be counted.

During quizzes and exams, the use of books, notes, electronic devices (including cell phones, smart watches, calculators, computers etc.), or any other kind of supporting learning material is **NOT** allowed. A student violating this rule will receive 0 points for that quiz/exam.

Lecture Attendance: There will be attendance checks in the form of pop-up quizzes during lecture times. There will be no make-up for any of these quizzes, either. In order to be valid, each quiz must bear name, surname, ID, signature of the students, and some effort to solve the given quiz. Students found having a behavior in contrast with Academic Integrity multiple times, will receive 0 from Lecture Attendance.

Online Homework: Detailed instructions on how to register to Pearson MyLab will be given on SU-Course+. The online homework will be assigned on the weekend and will be due on Thursday at 23:45. To do the homework, after logging into their personal MyLab account, each student will receive a random set of questions. There will be no make-up for any online homeworks if you miss the deadline.

NA Policy: Students who miss 2 out of the 3 exams (two midterms and the final exam) without valid excuses will get NA.

Registration Overrides: Time conflict requests for lecture hours will be accepted. However, any and all negative outcomes that may result are solely the student's responsibility.

Extra Help: Other than the lecturers, TAs, LAs and the course coordinator, students can get extra help from Academic Support. Announcements will be posted regularly on SUCourse+ to share their activities. Their web address is <http://adp.sabanciuniv.edu/en>.

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, using cheat-sheets etc. 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.

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 interrupts the lecture/recitation is unacceptable and may cause a student to be counted as absent for a lecture or a recitation.

Global suggestions for the semester:

- *Always* come to lectures and recitations with a notebook and a pen.
- Feel free to ask us and your TA/LA questions in and out of class, especially during office hours.
- 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.
- Attend the classes and recitation hours regularly. Make sure you attend your own (registered) recitation section.
- Studying out of class for this course should become a routine. Key to success in mathematics is practice.
- GeoGebra and Desmos are useful softwares/websites to visualize many of the concepts we discuss.

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+.

Weeks	dates	Topics
Week 1	Oct. 3, 4	8.1 - 8.2 Sequences 8.3 Infinite series
Week 2	Oct. 10, 11	8.4 - 8.6 Convergence tests
Week 3	Oct. 17, 18	9.1 - 9.2 Power series and their properties
Week 4	Oct. 24, 25	9.3 - 9.4 Taylor series
Week 5	Oct. 31, Nov. 1	11.1 - 11.2 Vectors
Midterm I (Nov. 5 Sat., time TBA)		
Week 6	Nov. 7, 8	11.3 Dot product
Week 7	Nov. 14, 15	11.4 Cross product 12.1 Planes and surfaces
Week 8	Nov. 21, 22	12.2 Graphs and level curves
Week 9	Nov. 28, 29	12.4 Partial derivative 12.5 The chain rule
Week 10	Dec. 5, 6	12.6 Directional derivatives and the gradient
Midterm II (Dec. 10 Sat., time TBA)		
Week 11	Dec. 12, 13	12.7 Tangent planes and linear approximation
Week 12	Dec. 19, 20	12.8 Maximum/minimum problems 12.9 Lagrange multipliers
Week 13	Dec. 26, 27	13.1 - 13.2 Double integrals 13.3 Double integrals in polar coordinates
Week 14	Jan. 2, 3	13.4 Triple integrals 13.5 Triple integrals in cylindrical and spherical coordinates