

# Calculus I (MATH 101 A, B, C)

## Sabancı University, Fall 2022/23

This syllabus is in its final form, but will be updated in case of unexpected and exceptional events

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**Lecturer (Section B):** Matteo Paganin

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**Lecturer (Section C):** Ayesha Asloob Topaçoğlu (Qureshi)

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**Coordinator:** Gamze Kuruk (office hours by appointment)

**e-mail:** gamze.kuruk@sabanciuniv.edu

**Office:** UC 1089

**Office Hours:** By appointment

**Class Hours:** (Section A) Mon 12:40-14:30, Tue 11:40-12:30 *always in FENS G077*

(Section B) Mon 14:40-16:30, Tue 11:40-12:30 *always in FMAN 1099*

(Section C) Mon 11:40 - 12:30, Tue 12:40 - 14:30 *always in FENS G077*

**Recitation Hours:** Fri 8:40 - 10:30 (A1 - A10),

Fri 10:40 - 12:30 (B1 - B10),

Fri 13:40 - 15:30 (C1 - C2, C5 - C10).

**You are responsible for every announcement made in class or in 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. You can purchase it from the Homer bookstore or following the instructions found on the course page, in SUCourse.

For online homeworks, students must have a personal account on Pearson MyLab. Detailed instructions, including how to create/link such an account, will be shared on SUCourse, during the second week of classes.

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### Condensed guideline of the present syllabus:

- Read this syllabus from top to bottom.
- Follow the announcements on SUCourse.
- Attend the lectures in class.
- Review the lecture notes before the recitations.
- Do the MyLab homeworks, if you purchased the book. The account on MyLab must be created with your *sabanciuniv.edu* address.
- Attend the recitations, both hours, and work on the problems presented in the weekly worksheet. Then take quiz at the end. Remember to sign the attendance sheet.
- Prepare for the midterm and final exams, without waiting for the last day.
- Take advantage of the Office Hours, to ask your questions to the instructors or to the assistants, and check out the suggested problems, that you can find on SUCourse.

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All the details, of what is mentioned above and more, are in the next pages.

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

- Functions and graphs,
- Limits and the derivative, differentiation rules,
- Applications of derivatives such as graph sketching, optimization, relative rates,
- The area problem and the definite integral,
- Computing definite or indefinite integrals,
- Applications of single-variable integrals as time allows.

For the entire course, we will work on single-variable functions. 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. Understand and use basic properties of elementary functions
2. Understand the idea of limit analytically/graphically, and evaluate limits
3. Understand the definition of derivative and its geometric meaning
4. Compute derivatives using standard differentiation techniques
5. Apply the notion of derivative graphing and optimization problems
6. Understand the definition of definite integral and its geometric meaning
7. Compute integrals using standard integration techniques
8. Understand the idea of integration over unbounded intervals and compute them.

**Lectures and Recitations:** Lectures are given in class as detailed above. Recitations are given in class as detailed in your course schedule. Attendance is checked in both occasions (see below in Participation).

Each recitation will consist of the following activities.

**Problem solving:** Assistants will discuss solutions of various exercises.

**Group-study:** Students are given a worksheet to work on, in groups, with the support of the Assistants.

**Quiz:** Students are given few questions, similar to the problems seen in the worksheets or in the discussion.

**Attendance:** Attendance is checked throughout the course.

**In lectures,** there will be attendance checks in the form of pop-up quizzes. There will be 7 to 8 such quizzes. In order to be valid, each quiz must bear name, surname, student ID number, signature of the students, and some effort to solve the given quiz.

Lecture Attendance is also used to compute your Lecture Participation, see the next page for details.

**In recitations,** attendance will be taken by signature. You must attend both hours AND participate in the quiz, in order to be counted as present. You are required to attend your registered recitation section, otherwise your attendance record will be lost. You will be able to check your attendance record once more in each following recitation (together with your quiz paper, see *Recitation Quizzes* below). If you have a medical report for an extended period of time (about a month or so), you must contact the course coordinator Gamze Kuruk, without any delay.

Recitation Attendance is also contributes to your Quiz Grade, see next page for details.

**NA Policy:** Students missing two exams, without a valid excuse, will receive NA if they also miss the make-up.

In general, if you will have serious issues preventing you from regularly following the course, you are required to contact the course coordinator Gamze Kuruk, without any delay. Please see also Class Discipline below.

**Grading:** Your grade exclusively depends on the following listed items. The details of each item are explained below. There will be **no** other extra-credit opportunities.

Midterm 1	22%
Midterm 2	22%
Final	36%
Lecture Participation	5%
Recitation Quizzes	15%
Online homeworks (requires MyLab account)	5%

**Midterm and Final:** The midterms will be on the below listed date and time. More detailed information will be available in the due course. The university will later announce the final exam date. The final may be given on any day between 7/1/2023 and 20/1/2023. Student Resources schedules it, so do not plan to leave Istanbul before 20/1/2022 (*see also the make-up policy below*).

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

Midterm 1	November 5th - between 9:30 and 11:00
Midterm 2	December 10th - between 9:30 and 11:00
Final	Scheduled and announced by SR

**Lecture Participation:** The lecture participation is computed from the Lecture attendance (see the previous page). There will be no make-up for any of those pop-up quizzes. Students found having a behaviour in contrast with Academic Integrity multiple times, will receive 0 from the Lecture Participation grade component.

**Recitation Quizzes:** There will be a short quiz, usually at the end of the each recitation. Suggested problems, useful to review and practice outside the recitations, are listed in SUCourse.

Each quiz will be graded out of 4+1 points, meaning that 4 points will be given from how correct and detailed your solution is and 1 point will be given if you attended the recitation and there is a honest attempt to solve the question (for example: just writing the quiz question is not enough).

You will be able to see your quiz paper in each following recitation (together with your attendance record, see *Attendance in Recitation* in the previous page).

At the end of the semester, the worst 4 quiz grades will be dropped. There will be no make-up for missed quizzes. Students found having a behaviour in contrast with Academic Integrity multiple times, will receive 0 from the Recitation Quizzes grade component.

**Online homework:** During the second week of the course, detailed instruction on how to create an account, use your code, and access the MyLab resources, will be shared with you on SUCourse.

The homeworks are posted on each weekend before the week starts and are due on Thursday at 23:45. There will be no make-up for the homeworks. At the end of the semester, we will drop the worst 30% scores.

**Exams Make-up Policy:** If you miss an exam and wish to make it up, you must contact Gamze Kuruk by mail, and explain your excuse as soon as possible.

If it is a health problem you need to bring a medical report, that 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). Only students that had contacted the coordinator with a valid excuse will be informed about the time and place. The make-up exam will contain all topics and is performed in person on campus.

**Extra Help:** Other than your instructor, your TA and the course coordinator, you can get extra help from Academic Support. Their web address is <http://adp.sabanciuniv.edu>.

**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 tolerated in the exams, quizzes or any assignment, 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 assignment 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. The following rules must be followed.

- Classes will start punctually on time. By coming to a class late, you will not only lose important material and announcements, but you will also disturb and distract others in the class, and disrupt the flow of the lecture or discussion.
- Leaving early is unacceptable (unless we are aware ahead of time). If you are unable to attend class, you are responsible to find out what you have missed.
- Put your mobile on silent mode and stow it away, unless you are instructed to use it for in-class activities.

Repeated violations of the above common sense rules may cause a student to be counted as absent for a lecture or a recitation.

Attention must be taken regarding COVID-19 spread prevention. This course will follow the recommendations of the university, if there are any updates.

#### General Suggestions:

- *Always* come to lectures and recitations with a notebook and a pen.
- Feel free to ask us and/or your Assistants 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 (and anything else) is practice.
- GeoGebra and Desmos are useful softwares/websites to visualize many of the concepts we discuss.

Below is a tentative breakdown of topics.

Week	Date	Topic (Sections from the textbook)
1	Oct 3, 4	1.1, 1.2
2	Oct 10, 11	1.2, 1.3
3	Oct 17, 18	1.4, 2.1, 2.2, 2.3
4	Oct 23, 24	2.3, 2.4, 2.5, 2.6
5	Oct 31, Nov 1	2.6, 3.1, 3.2, 3.3, 3.4
	Nov 5	MIDTERM 1
6	Nov 7, 8	3.5, 3.6, 3.7, 3.8
7	Nov 14, 15	3.9, 3.10, 3.11, 4.1
8	Nov 21, 22	4.2, 4.3
9	Nov 28, 29	4.4, 4.5, 4.6
10	Dec 5, 6	4.7, 4.9, 5.1
	Dec 10	MIDTERM 2
11	Dec 12, 13	5.2, 5.3, 5.4
12	Dec 19, 20	5.5, 6.2, 7.1, 7.2, 7.3
13	Dec 26, 27	7.4, 7.5, 7.8
14	Jan 2, 3	7.8