

**Calculus I (MATH 101 A, B)**  
**Sabancı University, Spring 2023/24**

*This syllabus is subject to minor changes, if necessary*

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

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**IMPORTANT:** when you mail any of us include **“MATH 101” in the subject**

**Class Hours:** Section A: Mon 11:40 -12:30 in *SBS 1099*, Tue 9:40 - 11:30 in *FENS G077*

Section B: Mon 16:40 - 17:30 in *FENS G077*, Tue 14:40 - 16:30 in *FENS G077*

**Recitation Hours:** Fri 8:40 - 10:30 (A1 - A6),

Fri 10:40 - 12:30 (B1 - B5),

Fri 12:40 - 14:30 (C1 - C3),

Fri 14:40 - 16:30 (D1 - D2).

**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. You can purchase it following the instructions found on the course page, in SUCourse.

**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 on both occasions.

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:** In about half the recitations, students who attended the second hour are given few questions as a quiz, similar to the problems already seen. Extra Suggested problems, useful to review and practice outside the recitations, are listed on SUCourse. Each week, during the lectures, we will announce if there will be a quiz on that week.

**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, and some effort to solve the given quiz.

You are required to attend your registered lecture section, otherwise your attendance record will be lost.

**In recitations,** attendance will be taken by signature, in both hours. You must actively attend both full hours and give in a valid quiz paper, if there is a quiz, in order to be counted as present.

Latecomers will not be allowed to sign the attendance sheet and a signature for the second hour is necessary for the quiz to be counted. You are required to attend your registered recitation section, otherwise your attendance record will be lost.

You are responsible for keeping track of your attendance records on SUCourse. If any is entered incorrectly, you must notify your lecturer or your TA, within 2 weeks from when they are published, to change it. If you have a medical report for an extended period of time (about a month or so), you must contact Matteo Paganin, without any delay. Attendance is used to compute the *Participation grades*, see the next page.

**NA Policy:** Students missing 2 exams or more will receive NA if they also miss the make-up.

In general, if there will be serious issues preventing you from regularly following the course, you are required to contact the Matteo Paganin. Please see also *Class Discipline* below.

**Grading:** Your grade exclusively depends on the following listed items. Each item is discussed after the table. There will be no other extra-credit opportunities.

Midterm 1	22%
Midterm 2	22%
Final	35%
Lecture Participation Grade	5%
Recitation Participation Grade	5%
Recitation Quizzes	16%

**Midterms and Final:** The midterms will be on the date and time listed below. 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 30/05/2024 and 09/06/2024. Student Resources schedules it, so do not plan to leave Istanbul before 13/6/2024 (especially if you need to take the *Makeup*, check below).

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

Midterm 1	March 23rd, 11:30-12:45
Midterm 2	May 4th, 11:30-12:45
Final	Scheduled and announced by SR

**Lecture Participation:** The lecture participation is computed from the *Lecture attendance* (see above). There will be no make-up for any of those pop-up quizzes. The best 5 of your lecture quiz scores will determine the Lecture Attendance grade. Students found having a behaviour in contrast with Academic Integrity, will receive 0 from the Lecture Participation grade component.

**Recitation Participation:** The recitation participation is computed from the *Recitation attendance* (see above). Each attended recitation is worth 1 point. The best 8 grades will determine the recitation participation grade. Students found having a behaviour in contrast with Academic Integrity, will receive 0 from the Recitation Participation grade component.

**Recitation Quizzes:** There will be 6 short quizzes in total. During the lecture, we will inform you if a quiz will be given that week. Note that you must have attended the second hour of that recitation for your quiz to be counted. During the entire duration of each quiz, students are proctored and expected to follow the Academic Integrity rules. More details are announced on SUCourse.

There will be no makeup for missed quizzes. At the end of the semester, the worst 2 grades will be dropped.

**Exams Make-up Policy:** If you miss an exam and wish to make it up, you must contact Matteo Paganin 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. The makeup will be at the end of the semester (after the finals period and before 13/6/2024). The makeup exam will contain all topics. The makeup will cover up to two exams.

Only students that had contacted the coordinator(s) with a valid excuse before the last days of the finals will be informed about the time and place. We do not take responsibility if you contact us too late.

There is no makeup for the makeup.

**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 general, to ensure Academic Integrity, any student might be asked to validate any activity contributing to their grade in an interview (recorded, with audio and video). A student failing to explain the submitted work, or refusing/missing the interview, will receive zero from that work.

In particular, no form of cheating is welcome 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. Any action that disturbs your classmates or disrupts the online activities is unacceptable. Repeated violations of the above rules may cause a student to be counted as absent for a lecture or a recitation.

**General Suggestions:**

- Feel free to ask us and 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 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)
Week 1	Feb 19, 20	1.1, 1.2
Week 2	Feb 26, 27	1.2, 1.3
Week 3	Mar 04, 05	1.4, 2.1, 2.2, 2.3
Week 4	Mar 11, 12	2.3, 2.4, 2.5, 2.6
Week 5	Mar 18, 19	2.6, 3.1, 3.2, 3.3, 3.4
	Mar 23	MIDTERM 1
Week 6	Mar 25, 26	3.5, 3.6, 3.7, 3.8
Week 7	Apr 01, 02	3.9, 3.10, 3.11, 4.1
Week 8	Apr 15, 16	4.2, 4.3
Week 9	Apr 22	4.4, 4.5
Week 10	Apr 29, 30	4.6, 4.7, 4.9
	May 4	MIDTERM 2
Week 11	May 06, 07	5.1, 5.2, 5.3
Week 12	May 13, 14	5.4, 5.5, 6.2, 7.1, 7.2
Week 13	May 20, 21	7.3, 7.4, 7.5
Week 14	May 27, 28	7.8