

# Calculus I (MATH 101 A, B, C) Sabancı University, Fall 2020/21

**Lecturer (Section A):** Nilay Duruk Mutlubas

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**Office Hours:** by appointment, on Zoom

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

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**Lecturer (Section C):** Albert Erkip

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**Office Hours:** by appointment, on Zoom

**Coordinator:** Matteo Paganin

**Class Hours:** (Section A) Mon 11:40 - 13:30, Tue 15:40 - 16:30

(Section B) Mon 13:40 - 15:30, Tue 8:40 - 9:30

(Section C) Mon 15:40 - 17:30, Tue 11:40 - 12:30

**Recitation Hours:** Fri 8:40 - 10:30

Fri 10:40 - 12:30

Fri 13:40 - 15:30

**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 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 such an account, will be shared on SUCourse+, during the second week of classes.

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## Condensed guideline of the present syllabus:

- Create a Zoom account and a TopHat account, both using your sabanciuniv.edu address.
- Follow the announcements on SUCourse+.
- Attend the lectures via Zoom, and answer the questions presented at the same time via TopHat.
- Check out the short videos we will upload on SUCourse+, with some discussions on how to solve the exercises and review the notes before the recitations.
- Do the MyLab homeworks, if you purchased the book.
- Attend the recitations via Zoom, uploading a pdf of your solutions of the weekly worksheet on SUCourse+, and answer the questions presented at the same time via TopHat. Keep your webcam on, for better interaction.
- Finalize your solutions of the worksheet by the next day.
- Prepare for the three Midterm Exams.
- Take advantage of the Office Hours, to ask your questions, and check out the suggested problems, again on SUCourse+.

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All the details 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 and Recitations are given online, via Zoom. Attendance is checked (see below in Participation) using the log files of Zoom. You are required to register a Zoom account using the sabanciuniv.edu mail address provided by the university. Log data related to other mail addresses will be ignored.

Each recitation will consist of the following activities

**Problem solving:** Students are given a worksheet to work on, with the support of the Assistants.

**Discussion:** Students are presented questions, via TopHat, to discuss the details of the weekly topics.

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

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

Midterm 1	20%
Midterm 2	20%
Midterm 3	20%
Lecture Participation	5%
Recitation Participation	5%
Recitation Quizzes	15%
Weekly Worksheets	15%
Online homeworks (requires MyLab account)	5%

There will be no final exam.

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### IMPORTANT:

Every document submitted needs to be hand-written, to be converted to pdf, and to include name, surname, student ID, and signature in the top left corner of each page (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 ignored.

Submissions by mail are never considered, SUCourse+ is the only means accepted.

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**NA Policy:** Students missing 5 or more recitations, or two exams, will receive NA. See the recitation participation policy.

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

**Midterms:** These are tests performed via SUCourse+. Questions can be presented in different ways, including the submission of hand-written answers. During their entire duration, students are proctored and recorded. More details are announced on SUCourse+.

Midterm 1	14.11.2020, Saturday, time TBA
Midterm 2	11.12.2020, Friday, during recitation
Midterm 3	08.01.2021, Friday, during recitation

**Participation Grades:** Participation is measured both in lectures and in recitations.

In each lecture and recitation, a certain number of pop-up questions will be presented to the students, via TopHat. Students attending their correct Zoom session will get 1 participation point if they also answer at least half of the questions. Only the TopHat answers given by students attending their correct Zoom lecture/recitation will be counted.

There will be no make-up for missed questions. At the end of the semester, we will drop the worst 30% scores (separately for Lecture participation and Recitation participation).

**Recitation Quizzes:** There will be 10 short quizzes, usually at the end of the each recitation. Suggested problems, useful to review and practice outside the recitations, are listed in SUCourse+. During the entire duration of each quiz, students are proctored and recorded. More details are announced on SUCourse+.

There will be no make-up for missed quizzes. At the end of the semester, only the best 7 will be considered.

**Weekly Worksheets:** In every recitation, students are asked to upload the first draft of their solutions of a worksheet, on SUCourse+. We then expect the final version of the solutions to be uploaded by each following Saturday at 19:00. The first draft will be granted 1 point if it is an ok solution of at least 50% of the worksheet. This final version is granted 1 more point if it contains ok solutions for the entire worksheet. If no final version is uploaded, the first draft will be considered as such, and then evaluated.

There will be no make-up for the worksheets. At the end of the semester, only the best 7 will be considered.

**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 Tuesday evening 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.

**Midterms Make-up Policy:** If you miss a Midterm and wish to make it up, you must contact Matteo Paganin by mail, and explain your excuse as soon as possible. Only students that had contacted the coordinator 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.

**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 via Zoom (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 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 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.

**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)
1	Oct 5, 6	1.1, 1.2
2	Oct 12, 13	1.3, 1.4
3	Oct 19, 20	2.1, 2.2, 2.3, 2.4
4	Oct 26, 27	2.5, 2.6, 3.1, 3.2
5	Nov 2, 3	3.3, 3.4, 3.5, 3.6
6	Nov 9, 10	3.7, 3.8, 3.9, 3.10
	Nov 14	MIDTERM 1
7	Nov 16, 17	4.1, 4.2
8	Nov 23, 24	4.3, 4.4, 3.11
9	Nov 30, Dec 1	4.5, 4.6, 4.7
10	Dec 7, 8	4.7, 4.9, 5.1, 5.2
	Dec 11	MIDTERM 2
11	Dec 14, 15	5.3, 5.4, 5.5, 6.1, 6.2
12	Dec 21, 22	7.1, 7.2, 7.3
13	Dec 28, 29	7.4, 7.5, 7.8
14	Jan 4, 5	7.8
	Jan 8	MIDTERM 3