Calculus I (MATH 101)  
Sabancı University, Fall 2023-2024  
This syllabus may be subject to update and change.

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**Office Hours:** Mon 11:40-12:30

**Section B Lecturer:** Gamze Kuruk  
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**Office Hours:** Mon 11:40-12:30

**Section C Lecturer:** Dimitris Papathanasiou  
**e-mail:** d.papathanasiou@sabanciuniv.edu  
**Office:** FENS L023  
**Office Hours:** Tue 11:40-12:30

**Coordinators:** Şirin Kaya & Gamze Kuruk

**Lecture Hours:** Section A: Mondays 12:40-14:30 and Tuesdays 11:40-12:30 (FENS G077).  
Section B: Mondays 14:40-16:30 and Tuesdays 11:40-12:30 (SBS 1099).  
Section C: Mondays 11:40-12:30 and Tuesdays 12:40-14:30 (FENS G077).

**Recitation Hours:** Fridays 08:40-10:30, 10:40-12:30, 12:40-14:30 and 14:40-16:30.

You are responsible for every announcement made in the lectures or on SUCourse. Not attending the lectures 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:

- 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.

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

**Recitations:** Each recitation will consist of the following activities:

- **Problem solving:** The assistants will solve some problems on the white board.
- **Group-study:** Students will discuss and solve problems from a given worksheet in groups.
- **Quiz:** On some weeks, there will be a quiz at the end of the recitation.

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Midterm 1 (11.11.2023)</td>
<td>22%</td>
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<tr>
<td>Midterm 2 (09.12.2023)</td>
<td>22%</td>
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<tr>
<td>Final Exam (13.01.2024)</td>
<td>30%</td>
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<tr>
<td>Lecture Attendance</td>
<td>5%</td>
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<tr>
<td>Recitation Attendance</td>
<td>5%</td>
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<tr>
<td>Recitation Quizzes</td>
<td>16%</td>
</tr>
<tr>
<td>Online Homework (requires Pearson MyLab account)</td>
<td>5% (bonus)</td>
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</tbody>
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Exams: There will be two midterm exams and a final exam. The dates of the exams will be announced at a later date. More details will be announced on SUCourse. The final may be given on any day between January 6th - 19th 2024. 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 25th, so do not plan to leave Istanbul before January 25th, 2024. We will not accommodate travel arrangements, or other personal business.

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

Lecture Attendance: Attendance during the lectures will be checked via pop-up quizzes at random times. In order to get the attendance points, you must be in the room while the pop-up quiz is asked and you must answer the quiz question. There will be 7 to 8 such quizzes and the best 5 of your lecture quiz scores will determine the Lecture Attendance grade. There will be absolutely no make-up for missed pop-up quizzes. You are required to attend your registered lecture section, otherwise your attendance record will be lost. Students found having a behavior in contrast with Academic Integrity, will receive 0 from the Lecture Attendance grade component.

Recitation Attendance: Attendance in recitations will be taken by signature, in both hours. To be counted as present, you need to actively attend both full hours. Latecomers will not be allowed to sign the attendance sheet for that hour. There will be absolutely no make-up for missed recitation attendances. You are required to attend your registered recitation section, otherwise your attendance record will be lost. Each attended recitation is worth 1 point. The best 8 will determine the recitation participation grade. Students found having a behavior in contrast with Academic Integrity, will receive 0 from the Recitation Attendance grade component.

Recitation Quizzes: There will be a quiz at the end of the recitation on some weeks. In order to be able to take the quiz, you need to be present during the second hour of the recitation. Latecomers will not be allowed to take the quiz. There will be absolutely no make-up for missed quizzes. The best 4 of your quiz scores will determine the Recitation Quiz grade. More details will be announced on SUCourse.

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

Important: Every quiz paper (in recitations or pop-up quizzes in lectures) needs to be hand-written and to have name, surname, student ID, and signature on the top left corner of the document, on each page submitted. Any page missing any of these information will be completely ignored.

Online Homework: Detailed instructions on how to register to Pearson MyLab will be given on SUCourse during the second week of the semester. 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 absolutely no make-up for any online homeworks if you miss the deadline.

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.

NA Policy: Students missing 2 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 coordinators.

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.

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 learning environment is unacceptable. Repeated violations of these rules 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 your instructor 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.
- 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.

In the *Resources* section of SUCourse, a list of problems will be provided from each section covered in the book. These problems are for self-study and preparation for the recitation quiz. You are not supposed to return their solutions to us.

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.

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Date</th>
<th>Topic (Sections from the textbook)</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>October 2, 3</td>
<td>1.1, 1.2</td>
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<td>Week 2</td>
<td>October 9, 10</td>
<td>1.3, 1.4</td>
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<td>Week 3</td>
<td>October 16, 17</td>
<td>2.1 - 2.3</td>
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<td>Week 4</td>
<td>October 23, 24</td>
<td>2.4 - 2.6</td>
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<td>Week 5</td>
<td>October 30, 31</td>
<td>3.1 - 3.3</td>
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<td>Week 6</td>
<td>November 6, 7</td>
<td>3.4 - 3.7</td>
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<td>Week 7</td>
<td>November 13, 14</td>
<td>3.8 - 3.11</td>
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<td>Week 8</td>
<td>November 20, 21</td>
<td>4.1, 4.2</td>
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<td>Week 9</td>
<td>November 27, 28</td>
<td>4.3 - 4.5</td>
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<td>Week 10</td>
<td>December 4, 5</td>
<td>4.6, 4.7, 4.9</td>
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<td>Week 11</td>
<td>December 11, 12</td>
<td>5.1 - 5.3</td>
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<tr>
<td>Week 12</td>
<td>December 18, 19</td>
<td>5.4, 5.5, 7.1</td>
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<tr>
<td>Week 13</td>
<td>December 25, 26</td>
<td>7.2, 7.4, 7.5</td>
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<tr>
<td>Week 14</td>
<td>January 2</td>
<td>7.8</td>
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