

# AMS 151 - Applied Calculus 1

Fall 2024; 3:30 PM - 4:50 PM; Mon & Wed

## Instructor Information

### Instructor

Hyunwook Koh, Ph.D.

### Email

[hyunwook.koh@stonybrook.edu](mailto:hyunwook.koh@stonybrook.edu)

### Office Location & Hours

B521; 1:00 PM - 5:00 PM, Fri (or by appointment)

## Course Information

### Course Description

The world around us is continually changing - populations increase, a cup of coffee cools, a stone falls, chemicals react with one another, currency values fluctuate, and so on. We would like to be able to analyze quantities or processes that are undergoing continuous change. For example, if a stone falls 10 feet each second we could easily tell how fast it is falling at any time, but this is not what happens – the stone falls faster and faster, its speed changing at each instant. In studying calculus, we will learn how to model (or describe) such instantaneously changing processes and how to find the cumulative effect of these changes. Calculus builds on what you have learned in algebra and analytic geometry but advances these ideas spectacularly. Its uses extend to nearly every field of human activity.

Calculus is less static and more dynamic. It is concerned with change and motion; it deals with quantities that approach other quantities. This course covers the topics of (1) **functions and models**, (2) **limits and derivatives**, (3) **differentiation rules**, (4) **applications of differentiations** and (5) **integrals**.

### Teaching Assistant

Jihye Yoon; Email: [jihye.yoon@stonybrook.edu](mailto:jihye.yoon@stonybrook.edu); Office: TBA; Office hours: TBA

Gihwan Lee; Email: [gihwan.lee@stonybrook.edu](mailto:gihwan.lee@stonybrook.edu); Office: TBA; Office hours: TBA

### Pre-Requisites

≥ B in MAT 123 (Pre-calculus) or ≥ Level 5 on the math placement exam

### Teaching Mode

All classes will be held in-person (C105).

### Textbook

“Calculus: Early Transcendentals” by James Stewart, Daniel Clegg, Saleem Watson, 9<sup>th</sup> edition, Cengage, 2021; International edition

### Course Materials

All the course materials (e.g., lecture notes, assignments) can be found on **Brightspace**.

## Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>

## School Policy on Attendance

1. All students are required to attend every class.
2. If a student has over 20% unexcused absences, the student's final course grade will be an F.
3. Students should report the reason of absence to the professor in advance, or immediately after the absence.
4. When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the professor.
5. The professor of the course reserves the right to excuse absences.
6. The professor may excuse the absence if the submitted documentation fulfills the following conditions: extreme emergencies, severe medical reasons with doctor's note, very important events.

## Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

## Course Evaluations

Stony Brook University values student feedback in maintaining the high-quality education it provides and is committed to the course evaluation process, which includes a mid-semester assessment as well as an end-of-the-semester assessment, giving students a chance to provide information and feedback to an instructor which allows for development and improvement of courses. Please click the following link to access the course evaluation system: <http://stonybrook.campuslabs.com/courseeval/>

## Grading

Final grade =  $f(\text{Attendance [10\%]} + \text{Homework [10\%]} + \text{Midterm 1 [25\%]} + \text{Midterm 2 [25\%]} + \text{Final [30\%]})$ ;  
ABCDF grading; 3 credits

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Total score	Final grade
94 - 100	A
90 - 93	A-
87 - 89	B+
84 - 86	B
81 - 83	B-

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78 - 80	C+
75 - 77	C
72 - 74	C-
69 - 71	D+
66 - 68	D
61 - 65	D-
$\leq 60$	F

### Tentative Course Schedule

No.	Date	Topic	Homework
1	Aug 26	Syllabus & A Preview of Calculus	
2	Aug 28	Functions and Models	TBA
3	Sep 2	Functions and Models	TBA
4	Sep 4	Functions and Models	TBA
5	Sep 9	Functions and Models	TBA
6	Sep 11	Limits and Derivatives	TBA
7	Sep 16	No class (Chuseok)	
8	Sep 18	No class (Chuseok)	
9	Sep 23	Limits and Derivatives	TBA
10	Sep 25	Limits and Derivatives	TBA
11	Sep 30	Limits and Derivatives	TBA
12	Oct 2	Limits and Derivatives	TBA
13	Oct 7	Midterm 1	
14	Oct 9	No class (Hangul Day)	
15	Oct 14	Differentiation Rules	TBA
16	Oct 16	Differentiation Rules	TBA
17	Oct 21	Differentiation Rules	TBA
18	Oct 23	Differentiation Rules	TBA
19	Oct 28	Applications of Differentiation	TBA
20	Oct 30	Applications of Differentiation	TBA
21	Nov 4	Applications of Differentiation	TBA
22	Nov 6	Applications of Differentiation	TBA
23	Nov 11	Applications of Differentiation	TBA
24	Nov 13	Midterm 2	
25	Nov 18	Integrals	TBA
26	Nov 20	Integrals	TBA
27	Nov 25	Integrals	TBA
28	Nov 27	Integrals	TBA
29	Dec 2	Integrals	TBA
30	Dec 4	Integrals	TBA

<b>No.</b>	<b>Date</b>	<b>Topic</b>	<b>Homework</b>
31	Dec 11	Final	

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### **Tentative Exam Schedule**

<b>Date</b>	<b>Subject</b>
Oct 7	Midterm 1
Nov 13	Midterm 2
Dec 11 (3:15 PM - 5:45 PM)	Final

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