AMS 151 – Applied Calculus 1

Fall 2023; 3:30 PM – 4:50 PM; Tue & Thu

Instructor Information

Instructor	**Email**	**Office Location & Hours**
Hyunwook Koh, Ph.D.	hyunwook.koh@stonybrook.edu	B-521;3:00 PM - 5:00 PM, Mon & Wed (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

Minseo Park; Email: minseo.park@stonybrook.edu; Office: B515; Office hours: 1:00 PM – 3:00 PM, Wed

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 (**C103**).

Textbook

"Calculus: Early Transcendentals" by James Stewart, Daniel Clegg, Saleem Watson, 9th edition, Cengage, 2021 (required); **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 emergences, 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(Attendance [10%] + Homework [10%] + Midterm 1 [20%] + Midterm 2 [20%] + Midterm 3 [20%] + Final [20%]); ABCDF grading; 3 credits

Total score	Final grade
94 - 100	A
90 - 93	A-
87 - 89	B+
84 - 86	B
81 - 83	B-
78 - 80	C+
75 - 77	C
72 - 74	C-

69 - 71	D+
66 - 68	D
61 - 65	D-
≤ 60	F

Tentative Course Schedule

No.	Date	Topic	Homework
1	Aug 29	Syllabus & A Preview of Calculus	
2	Aug 31	Functions and Models	TBA
3	Sep 5	Functions and Models	TBA
4	Sep 7	Functions and Models	TBA
5	Sep 12	Functions and Models	TBA
6	Sep 14	Limits and Derivatives	TBA
7	Sep 19	Limits and Derivatives	TBA
8	Sep 21	Limits and Derivatives	TBA
9	Sep 26	Limits and Derivatives	TBA
10	Sep 28	No class (Chuseok)	
11	Oct 3	No class (Korea National Foundation Day)	
12	Oct 5	Midterm 1	
13	Oct 10	Differentiation Rules	TBA
14	Oct 12	Differentiation Rules	TBA
15	Oct 17	Differentiation Rules	TBA
16	Oct 19	Differentiation Rules	TBA
17	Oct 24	Differentiation Rules	TBA
18	Oct 26	Midterm 2	
19	Oct 31	Applications of Differentiation	TBA
20	Nov 2	Applications of Differentiation	TBA
21	Nov 7	Applications of Differentiation	TBA
22	Nov 9	Applications of Differentiation	TBA
23	Nov 14	Applications of Differentiation	TBA
24	Nov 16	Midterm 3	
25	Nov 21	Integrals	TBA
26	Nov 23	Integrals	TBA
27	Nov 28	Integrals	TBA
28	Nov 30	Integrals	TBA
29	Dec 5	Integrals	TBA
30	Dec 7	No class (Correction day)	
31	Dec 12	Final	

Tentative Exam Schedule

Date	Subject
Oct 5	Midterm 1
Oct 26	Midterm 2
Nov 16	Midterm 3
Dec 12	Final
(3:15 PM – 5:45 PM)	