

CALCULUS A I: MATH101006, NATIONAL TSING HUA UNIVERSITY

Fall 2024

Basic Information:

- Instructor: Dr. Oğuz Gezmiş
- Class time: T3T4R3R4
- Location: C.L.Liu Room 207
- Instructor's email address: gezmis.oguz@gmail.com
- Instructor's office: R616, General Building III
- Office hours: Tuesdays and Thursdays at 1.30pm-3pm

Course Description:

Chapter 1 to Chapter 8 (and Chapter 9 if time permits) of the textbook will be covered. The topics that will be covered include:

Functions and limits: limit of a function, continuity. Differentiation: derivatives of functions, basic formulas of differentiation, differentiation rules, implicit differentiation, applications of differentiation. Integrals: areas and distances, definite integrals, Fundamental theorem of Calculus. Techniques of integration. Inverse functions. Applications of integration, Differential Equations (if time permits).

Course learning objectives:

The learning objectives of this course include:

- Understand and demonstrate the concept of limits, both graphically and algebraically.
- Understand the ϵ, δ definition of limits.
- Understand the relationship between limits, continuity, and differentiability.
- The ability to use differentiation to understand and analyse the shape of the graph of a function.
- The ability to apply differentiation to real world problems.
- Understand the antiderivative of a function,
- The ability to analyze the relationship between differentiation and integration using the Fundamental theorem of calculus and integration rules.
- The ability to apply integration to finding area between curves, and finding volume of a solid.

Core capability to be cultivated by this course:

- Having the ability to discover, analyze and solve problems.
- Developing the ability to interact mathematics with other subjects.
- Developing the ability of using mathematical logic to think.

- Developing the ability to learn advanced mathematical knowledge.

Regarding the usage of the AI: In this course, using AI will not be allowed.

Textbook:

Calculus 9/e Metric Version (International Edition), James Stewart.

Recitation classes:

There will be weekly recitation classes led by a graduate student teaching assistant, who will answer questions, proctor during the quizzes and exams and work through some of the suggested exercises. It is required to participate recitation classes.

- Time: 19:00-21:00 pm. on every Wednesday
- Location: Delta 201, 202, 211

Grade scale:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	E	X
Range	90-100	85-89	80-84	77-79	73-76	70-72	67-69	63-66	60-62	50-59	1-49	0

Grade policies:

- Quizzes: 15% (Date: Biweekly)
- Exam I: 20% (Date: October 23th, 2024)
- Exam II: 20% (Date: November 20th, 2024)
- Homework: 15% (Date: Weekly)
- Final: 30% (Date: December 19th, 2024)

Quizzes:

There will be regular 50 minutes quizzes throughout the semester biweekly. The content of the quizzes will be based on the homework questions. They are going to be held during the recitation hour. Here is the schedule:

1. Quiz 1– September 11th
2. Quiz 2– September 25th
3. Quiz 3– October 16th
4. Quiz 4– October 30th
5. Quiz 5– November 14th
6. Quiz 6– November 30th

Exam I and II:

You must bring your student identity card to the exam. The exams are going to be held during the recitation hour.

Final Exam:

The final exam will be **comprehensive** and is **mandatory**. You must bring your student identity card to the exam.

Homework:

There will be weekly homework assignments consisting of several questions. The homework exercises will be evaluated for a grade.

Attendance and Make-up policies:

- Students are encouraged to attend class regularly as attendance has a correlation to success.
- To be eligible to make up an exam or a quiz that was missed due to an illness or other unexpected absence, the student must **(i)** notify the instructor within 2 working days of the missed exam or quiz, **(ii)** provide a valid excuse document (e.g., a doctor's note).

Email policy:

- Check your email regularly as class-wide information will be communicated via email.
- While sending emails to the instructor, include your full name and course number.

Electronic devices policy:

Use of any electronic device is forbidden in any of the quizzes or exams.

Technology:

- Ability to scan and upload written work is recommended. Suggested applications: in the absence of a scanner, Adobe provides a free phone application called Adobe Scan.
- Access to eclass.
- Access to Google meet in the event of a switch to online classes or for meetings while one party is ill/under order to isolate/quarantine.

Academic Honesty:

Please consult the University regulations on academic fraud (Article 31):

<http://academic.site.nthu.edu.tw/var/file/7/1007/img/4108/AcademicRegulations-1080430.pdf>.