Math 2033, Mathematical analysis, Fall 2026

1. Instructor: Maosheng Xiong

   Contact infor: Email: mamsxiong@ust.hk;

   Office: Rm 3455; Tel: 2358-7456;

   Office hours: Tue/Thu, 10:30—11:50 or by appointment.

   Course website: https://canvas.ust.hk/courses/73308/pages/math2033-mathematical-analysis

2. Teaching Assistant:

   HAN Chenxi, chanai@connect.ust.hk

   WEI Lingjie, lweiam@connect.ust.hk

3. Meeting Time and Venue:

   Lectures: Tue and Thu, 9:00—10:20, CYTG001

   Tutorial: T1A: Thu, 17:30—18:20, Rm 5583;

   T1B: Tue, 15:00—15:50, Rm 6555.

4. Course Description:

   4 credit units.

   Prerequisite: A passing grade in AL Pure Mathematics / AL Applied Mathematics; OR MATH 1014 OR MATH 1020 OR MATH 1024.

   Exclusion(s): MATH 2043

   Topics: Sets and functions, real numbers, limits of sequences and series, limits of functions, continuous functions, differentiation, Riemann integration, additional topics.

5. Intended Learning Outcomes

   Upon successful completion of this course, students should be able to:

No.	ILOs
1	Recognize and use appropriately important terms and definitions in analysis.
2	Understand logical deduction of important facts in mathematical analysis of one variable and apply integration theory to solve mathematical and statistical problems.
3	Apply rigorous analytical techniques taught in class to solve problems frequently appeared in the mathematical profession.

6. Assessment Scheme

Assessment	Assessing Course ILOs
15% by homework assignment	*1,2,3,4*
15% by online quiz	*1,2,3,4*
25% by midterm exam	*1,2,3,4*
45% by final exam	*1,2,3,4*

7. Grade Description

Grades	Short Description	Elaboration on subject grading description
A	Excellent	The student has mastered almost all concepts and techniques of real analysis taught in the course, has excellent understanding of the deepest content of the subject, and acquired workable knowledge for further studies.
B	Good	The student has mastered basic theoretical concepts and most computational techniques of real analysis taught in the course, yet

		the understanding of some challenging concepts may not be deep enough for further studies on related advanced subjects.
C	Satisfactory	The student meets the minimum expectation of the instructor, has acquired some basic computational techniques of the subject, yet some concepts were not clearly understood.
D	Marginal Pass	The student is only able to recall some fragments of topics and is able to complete some of the easiest computations.
F	Fail	The student does not have sufficient understanding of even some fragments of topics, and is not even able to complete some of the easiest computations.

8. Course AI Policy

   Students are allowed to consult any person (including the instructor, TA, classmates, friends outside HKUST) in any homework or quiz for ideas and hints but are required to write up the solutions by themselves.

   The use of ChatGPT or other generative AI is allowed. Students should be critical of the response generated by AI and do not blindly copy the generated responses to the homework.

9. Student Learning

   Textbook:

   - *An Introduction to Analysis*, by William R. Wade, 4th edition, Pearson, New Jersey, 2010.
   - *Analysis I*, Third edition, by Terence Tao, Texts and Readings in Mathematics 37, Springer, 2020.

10. Teaching and Learning Activities -
    a. Lectures: focus on course materials, 3 hours per week
    b. Tutorials: 1 hour per week

11. Academic Integrity

    Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct.