THE CHINESE UNIVERSITY OF HONG KONG
Department of Mathematics
MATH1050B/C, MATH1058 (Second term, 2023-24)
(Honours) Foundation of Modern Mathematics

This course introduces rigorous mathematical reasoning, and proofs. The use of logic in mathematics and various methods of proof will be illustrated by concrete examples from a variety of topics in mathematics.

Topics are selected amongst: logic and axiomatic systems; sets, relations and functions; infinite sets and countability; numbers and polynomials.

Instructor

- Fong Wing-Chung (Office: Rm 218 LSB. Email: `wcfong@math.cuhk.edu.hk`)

Tutors

- Ng Ming Ho (Email: `mhng@math.cuhk.edu.hk`)
- Guo Yuhang (Email: `yhguo@math.cuhk.edu.hk`)
- Lin Xiaoli (Email: `xllin@math.cuhk.edu.hk`)
- Tong Nok To Omega (Email: `onttong@math.cuhk.edu.hk`)

For consultation hours of the teaching assistants, refer to the MATHGYM:

`https://www.math.cuhk.edu.hk/student-centre/mathgym-faculty-tutor-qa-centre-mathematics`

Time and Venue

- MATH1050B: Tuesdays 1630-1815hrs LSB LT4, Thursdays 1130-1315hrs MMW 703.
- MATH1050C: Wednesdays 1130-1315hrs ARC 212, Thursdays 1630-1815hrs LSK 210.
- MATH1058: Tuesdays 1030-1215hrs YIA LT8, Wednesdays 1630-1815hrs WMY 403.

Course homepage and 'Blackboard' site.

Two internet sites will be used in MATH1050B/C and MATH1058:

- Course homepage at the website of the Department of Mathematics:

  `http://www.math.cuhk.edu.hk/course_builder/2324/math1050a/1050bc1058hp-mat.html`

  It is used for storing all course material (for example, supplementary notes, exercises), except video-type coursewares (if any).

  It is used for posting announcements about the course.

  The website can be accessed as described below:—

  1. Go to the homepage of the Department of Mathematics

     `https://www.math.cuhk.edu.hk/`.

  2. Click 'Undergraduate' at the the 'top panel', and select 'Courses' amongst the items which appear. Then you will be at the page:

     `https://www.math.cuhk.edu.hk/undergraduates/courses`

3. Click any one of the items 'MATH1050B', 'MATH1050C', 'MATH1058'. The link to the course homepage will appear under the item 'Useful links'.

- 'Blackboard' common site of MATH1050B/C and MATH1058.

  It is used for storing video-type coursewares (if any).

Course announcements and email communications.

1. Course announcements may be put onto the course homepage at the website of the Department of Mathematics, and/or communicated via the CWEM.

2. (a) Students are strongly advised to use CWEM when sending emails to the teachers and/or the TA's.
   Emails not sent from CWEM may be marked 'JUNK' and ignored by the email server.

   (b) Students are strongly advised to use English when writing emails to the teachers and/or the TA's.
   Messages written in other languages could be corrupted in the transmission process. Such messages might be blocked by the email server.

   (c) If your email message involves mathematical symbols, you are encouraged to type the symbols with 'latex commands'.
   You will find all the relevant LaTeX commands at

   `https://oeis.org/wiki/List_of_LaTeX_mathematical_symbols`

Teaching Schedule

Below is the tentative schedule for the course:

- Weeks 1-7: various methods of mathematical proofs; set operations; logic; numbers.
- Weeks 7-13: functions, relations and infinite sets.

Assessment Scheme, and submission of work for assessment

For the overall framework of assessment, refer to the *Assessment Scheme Second Semester 2023-24*.

Academic Honesty

Attention is drawn to University policy and regulations on honesty in academic work, and to the disciplinary guidelines and procedures applicable to breaches of such policy and regulations. Details may be found at

`http://www.cuhk.edu.hk/policy/academichonesty/`

There is zero tolerance on plagiarism. If you are found to have committed plagiarism, you will be reported to the university for disciplinary action and you could be recommended to receive the 'F' grade in the course.

Books and other learning resources

Refer to *Books and other learning resources*.