

**THE CHINESE UNIVERSITY OF HONG KONG**  
**Department of Mathematics**  
**MATH1530** (First term, 2018-19)  
**Basic Mathematics for Business and Social Sciences**

## **Instructor**

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

## **Tutors and Graders**

- Cheung Hang (Office: Rm 222A LSB. Email: [hcheung@math.cuhk.edu.hk](mailto:hcheung@math.cuhk.edu.hk))
- Yao Huadong (Office: Rm 222A LSB. Email: [hdyao@math.cuhk.edu.hk](mailto:hdyao@math.cuhk.edu.hk))

## **Time and Venue**

- Lectures and Tutorials: Tuesdays 1030-1215hrs ELB LT4, Thursdays 1230-1415hrs WMY 403.
- Congregation day (Thursday 15/11): *No class.*

## **Tutor's consultation hours**

- Cheung Hang: Mondays 1230-1330hrs, Wednesdays 1730-1930hrs, Thursdays 1430-1530hrs.
- Yao Huadong: Mondays 1030-1230hrs, Wednesdays 1030-1230hrs.

## **Assessment Scheme**

- **Test:** 50%  
Date: 1/11 Thursday. Time: 1900-2100hrs. Venue: *To be announced.*
- **Final Examination:** 50 %

## **Course Material and Course Announcements**

Course material (for example, supplementary notes, assignments, tutorial sheets) will be uploaded to the course homepage at

[http://www.math.cuhk.edu.hk/course\\_builder/1819/math1530/1530hp-mat.html](http://www.math.cuhk.edu.hk/course_builder/1819/math1530/1530hp-mat.html)

Course announcements made in class may be put onto the course homepage and communicated via the CWEM.

## **References**

1. B. D. Bunday, H. Mulholland, *Pure Mathematics for Advanced Level*, Butterworths 1970.  
The electronic version of this book is available at

<https://archive.org/details/PureMathematicsForAdvancedLevel>

2. *Any textbook for HKCEE Additional Mathematics.*

## **Teaching Schedule**

The schedule is provisional. There may be modifications along the semester.

- Weeks 1-7: Algebraic techniques.
- Weeks 8-13: Elements of differential and integral calculus.

## Exercises

1. You will be given an exercise set for each meeting of the class. You do not have to submit your work on the questions, but we hope you will try as many questions as possible. We may discuss some of the questions during the lectures, and some during tutorials.
2. Depending on the topics covered in the meeting, the exercise sheet will be accompanied with a sheet with the title 'Definitions and results'. It serves as a reminder for the key mathematical content covered in the meeting.
3. Questions which require more thought and/or work and/or tricks and/or organization and/or ... are marked by  $\diamond$ ,  $\clubsuit$ ,  $\heartsuit$ ,  $\spadesuit$ , in ascending order of overall difficulty level.
4. Questions which are marked by  $\uparrow$  are designed to as guided questions help you fill in the reasoning for various mathematical results used but not verified. There is no need to worry about such questions in the test and the examination. (That said, you still need know the results concerned and how to apply them.)
5. Questions which are marked by  $\Downarrow$  are concerned with background skills and knowledge for various topics in further MATH courses that you might take. There is no need to worry about such questions in the test and the examination. (That said, you may be expected to be able to handle such questions in MATH1010 and beyond; it will be your fault if you do not catch up by then.)
6. **Numerical answers** will be provided. If you want to know whether your solution to any particular problem is correct, you must contact the tutors, preferably during the **tutors' consultation hours** (or any time they agree to meet you).

## Mandatory work and recommended work pattern

1. It is expected that you attend the lectures and the tutorials.
2. If you skip a lecture or a tutorial, you are expected to devote extra hours to catch up on your own what has been covered in the lecture or the tutorial.
3. It is expected that you will devote six hours for review, preferably in two or three sittings, by working on the exercise sheets of each week:
  - (a) Start with the straightforward questions, which are unmarked, and those marked with  $\diamond$ . Only after you are comfortable with such questions should you proceed to questions marked with  $\clubsuit$ , or even  $\heartsuit$ ,  $\spadesuit$ .
  - (b) Many questions in the exercises are of old-curriculum 'HKCEE Additional Mathematics' level. Six hours' work corresponds approximately to, for example, twenty 'short questions' (such as 'solving equations', 'solving inequalities') and six 'long questions' (such as 'questions with several inter-related parts').
  - (c) Depending on the topics covered, some exercise sheets will contain a higher proportion of easier questions, some will contain a higher proportion of more difficult questions. (You can gauge the overall difficulty level of an exercise sheet from the proportions of various labels in the exercise sheet.)
    - i. For an easier exercise sheet, as long as you feel comfortable with the questions, you may stop whenever you like. You may choose to leave the other questions for test/exam preparation.
    - ii. For a more difficult exercise sheet, two hours' focused effort, even though covering one or two questions only, will be very good work already: don't worry even though you have left many questions in the same exercise sheet left unattempted. It can happen that when you try the other questions in such an exercise sheet later, you will suddenly find that they are actually not as difficult as at first glance. (This is because you have improved after doing some serious work, rather than the questions become easier).