

MA1301– Sem B 2017/2018

Course Information

Instructors: Prof. DAI Hui-Hui, Dr. DAI Dan

Teaching Assistants: LI Yuanyou, YAO Luming

Prerequisites:

- 1) MA1300 Enhanced Calculus and Linear Algebra I or
- 2) Grade B or above in MA1200 Calculus and Basic Linear Algebra I (approval from MA must be obtained)

Purpose of Course: This is the second of two required courses designed for students pursuing studies in mathematics, or engineering/science students requiring solid background in mathematics. It aims to

- develop fluency in concepts and techniques from integral calculus, linear algebra and complex numbers,
- introduce elementary theory of differential and integral calculus, and
- foster skills in implementing methods of calculus and linear algebra to mathematical and physical applications.

Textbook:

- 1) Single Variable Calculus, by James Stewart, 7E;
- 2) Modern Engineering Mathematics, by Glyn James, 4E.

Content of MA1301: In this semester, we will cover Ch 4-5, 7-8 of the first textbook, together with Ch 3-5 of the second textbook. Upon completion of this course, you should be able to understand integrals and their applications in mathematical modeling, complex numbers, vectors and their properties, matrices and determinants, linear system of equations.

Topics covered in 7 chapters:

Chapter 1 Integrals

Chapter 2 Applications of Integration

Chapter 3 Techniques of Integration

Chapter 4 Further Applications of Integration

Chapter 5 Vector Algebra

Chapter 6 Complex Number

Chapter 7 Matrix and Linear System

Lecture notes:

Lecture notes can be downloaded from Canvas. Only topics covered in the notes will be assessed. In case notations in notes differ from the corresponding ones in the reference books, we follow the notation in the lecture notes.

Grading scheme and policies**Coursework (30%):**

3 Hand-in Assignments (5%):

Each assignment includes some additional questions. They will be **uploaded** to Canvas accordingly.

Test and Project (25%):

Score formula: $\text{Max}(100\% \text{ of Mid-term test}, 50\% \text{ of Mid-term test} + 50\% \text{ of Project})$.

The mid-term test takes about 1.5 hours. The test is scheduled in Week 9 tentatively. Each student is required to take test in his/her lecture session.

For discovery-enriched curriculum (DEC), an optional project will be arranged. Students have the freedom to choose the project or not.

Final Examination (70%):

Final takes about 3 hours. Students have to get over 30 marks in Final for passing this course.

Make-up exams will *not* be offered except in extraordinary circumstances.

Calculator Policy:

see <http://www6.cityu.edu.hk/arro/content.asp?cid=67>

In addition, no graphical calculator.

Tips for getting good grades:

1. Attend lectures and recitations, take good notes.
2. Don't be afraid to ask questions.
3. Do the exercises in the textbook. Practice makes perfect.
4. Review for midterms and exams.

The instructor reserves rights to make necessary changes for the course any time during the quarter. The students are responsible for keeping up with possible changes.