MATH 2205, Multivariate Calculus
Semester 1, 2017

Webpage: `http://www.math.hkbu.edu.hk/~amypang/2205`

Class:

- Monday 14:30-16:20 @ AAB205
- Wednesday 13:30-15:20 @ LT2

Each class contains a mixture of lecture and exercises (see below).

Instructor: Dr. Amy Pang, FSC 1108, amypang@hkbu.edu.hk.

Teaching Assistants:

- CHIANG Shun Ling, gcling@hkbu.edu.hk;
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- XIAO Jingni, 15484246@life.hkbu.edu.hk;

Office hours: with Dr. Pang in FSC 1108. No appointment is necessary. There will be changes from time to time, please check the class webpage before you come.

- Monday 17:00-18:00
- Tuesday 13:30-15:30
- Wednesday 11:30-12:30 (for this class only)
- Thursday 15:30-16:30

Textbook: *Calculus: A Complete Course*, 7th, 8th or 9th edition, by Robert A. Adams and Christopher Essex, published by Pearson. In other words, any **one** of the following:

- *Calculus: A Complete Course (7th Edition)*, ISBN 978-0-321-54928-0;
- *Calculus: A Complete Course (8th Edition)*, ISBN 978-0-321-88021-5;
- *Calculus: A Complete Course (9th Edition)*, ISBN 978-0-134-58867-4.

The MATH 1005 textbook *Calculus: Single Variable* is the first half of our textbook; if you still have that book then you will only need to get the second half, i.e. any **one** of the following:

- *Calculus: Several Variables (7th Edition)*, ISBN 978-0-321-54929-7;
- *Calculus: Several Variables (8th Edition)*, ISBN 978-0-321-87741-3;
- *Calculus: Several Variables (9th Edition)*, ISBN 978-0-134-57978-8.

Homework questions will mostly be from the textbook, so make sure you have access to a copy. We will cover roughly chapters 5.1-5.5, 6.1, 6.5, 10.1-10.2, 10.4-10.6, 12.1-12.9, 13.1-13.4, 14.1-14.7 in the 7th Edition, which is chapters 5.1-5.5, 6.1, 6.5, 10.1-10.2, 10.4-10.6, 12.1-12.9, 13.1-13.5, 14.1-14.7 in the 8th Edition and 9th Edition.

Prerequisites: A very good background in single variable differential calculus, and basic knowledge and computations in linear algebra. See the sample questions on the class webpage.

In-class exercises: Roughly one-quarter of class time will be spent doing problems. You are encouraged to discuss the problems with your classmates and the TAs. A worksheet will be handed out near the start of class; it will be collected at the end of class and graded by the TAs. These in-class problems are **not** sample homework or exam problems, they are much easier because they are designed to let you discover **new (examinable) techniques not presented in the lecture portion**. Extra sheets or solutions are **not available after class**.

Homework: Homework will be released roughly every two weeks on the course webpage. It is the student's responsibility to check the webpage for new homework postings. Homework is due 15 minutes after the start of class on the due date. **No homework will be accepted after the due time, and no extensions will be granted under any circumstances.** You are encouraged to work with your classmates, but you should write up your solution by yourself, to check that you fully understand it and can solve similar problems on your own in the exams.

Exams:

- 2 Midterms: roughly 1 hour, at the start of class:
  - 14:35, Monday 16 October @AAB205
  - 13:30, Wednesday 15 November @LT2
- Final: 2 hours, between 8-21 December, probably before 12 December. Exact date and location to be announced.

Assessment: Your overall course mark will be computed from:

- 30% Continuous Assessment (mixture of in-class exercises, homework and midterms; proportion will not be announced).
- 70% Final Exam.

Some advice:

- Your priority in class is to listen. Do not worry about copying the notes, because all the notes will be on the class website: the slides are available from the schedule tab before class; anything handwritten is posted to the shared Google folder during class. You can also take pictures of the screen/board. You can always copy the notes after class, but what is spoken in class will not be available afterwards.
- Before each class, look on the schedule on the class webpage to see which topics will be covered, and review your notes from single-variable calculus about that topic. Make sure you can do the related questions on the prerequisites.
- If you don't know how to solve a problem, try not to look at any solutions until two or three days later. Look for similar examples in class notes or the textbook, work with your friends, or do another question and come back to it later - sometimes good ideas come when you are not thinking about the problem. This process helps you understand the material. If you look at the solution before trying the problem, you won't understand *why* that particular method was useful, then in the exam you won't know which method to use.
- There are extra textbook practice problems on the class webpage, on the far right hand column of the calendar inside the schedule tab.
- The course is full of material, so if we lose a class due to bad weather, we will almost certainly have a make-up class at the end of term.