

MTH4100
Preparing for your Calculus 1 exam
Final version, updated 02/04/2010

Calculus 1
year 2009/2010

- Your Calculus 1 exam will take place on

Thursday, 13 May 2010 from 10.00-12.00 in York Hall Bethnal Green.

Please check out the College webpage

http://www.arcs.qmul.ac.uk/examinations/invigilated_examinations/examination_timetable.html

for a map showing the location of your exam.

- Work yourself through a suitable number of the six sample exams from the previous three years 2007 to 2009. All these exams are available on the course webpage. The *structure* of the 2010 exam paper will be exactly identical to these exams. The *individual problems* will of course be different, but you will thus get a good idea about what to expect.
- Solutions for these exam papers are available as follows:

exam	model solution
First sit exam 2009	Most solutions to these exam questions are contained in the coursework model solutions and in the lecture notes, which are all available on the course webpage. This should encourage you to study coursework questions and lecture notes.
Late summer resit exam 2009	The solution to this exam will be discussed in a revision class, please see below for details.
First sit exam 2008	The full model solution is available on the course webpage.
Late summer resit exam 2008	Some solutions to these exam questions are contained in the coursework model solutions and in the lecture notes, which are all available on the course webpage. This sample exam is for students who want to test the 'real thing' without being pampered by model solutions.
First sit exam 2007	The full model solution is available on the course webpage.
Late summer resit exam 2007	Some solutions to these exam questions are contained in the coursework model solutions and in the lecture notes, which are all available on the course webpage. Again, this sample exam is for students who want to test the 'real thing'.

- If you have any specific question on previous exam problems, please visit me during my office hours, which are posted on my homepage under <http://www.maths.qmul.ac.uk/~klages> However, I then expect to see a *written attempt* from you of how you have tried to solve the respective sample exam.
- Note that Calculus 1 exams earlier than 2007, which are available on the College's exam papers homepage (code MAS101), are different from the ones of 2007 or later (code MAS115 or MTH4100), because the format of this module has changed in 2005/2006. That is, for the 2010 exam it will fully suffice to study the 2007 to 2009 exams.

- The first part of the exam paper is like a shortened version of the midterm test that you have sat, except that now you have to do it on paper. You should be able to work through this section in about 45 minutes, leaving you with plenty of time for the second part of the paper.
- The remaining questions test skills you have practiced in your written coursework and in the exercise classes. You will have to do things like
 - apply calculus techniques, e.g., to do curve sketching, to differentiate from first principles, and so on
 - state definitions and apply them meaningfully
 - state theorems and be able to work with them
- *Show that you understand what you are doing!* For example, if you are asked about the symmetries of a given function, do not just answer ‘odd’ (are you guessing?). Show by a calculation how you come to this conclusion. Please note that partial marks will be awarded to all exam questions. That is, if you only give the answer to a question for which a calculation is needed, without providing any calculation, even if the answer is correct you will only be awarded partial marks. On the other hand, if you show by a calculation that you have essentially understood of how to solve the problem, but your calculation contains errors leading to the wrong result, you will still earn partial marks.
- *Do not simply try to memorize solutions from previous exams!* For example, the Late Summer Exam 2009 asked for the *Mean Value Theorem for definite integrals*. Almost all students blindly copied an answer from the Late Summer Exam 2008 (because a model solution was provided for it!), which asked the totally different question about the *Intermediate Value Theorem*. Therefore: *Think* when preparing for your exam! Try to understand the material. When sitting your exam, do not act like a machine blindly reacting to keywords (like ‘Theorem’ in the above example). Try to understand the question. Preparing for your exam by memorizing previous exam’s model solutions in the very last minute won’t work!
- If you are aiming at a *bare pass* (40 marks), practice at least on a suitable number of sample exams. You will be *ideally prepared* for the exam (aiming at at least 70 marks for an A) if in addition you review
 1. all your Calculus 1 online coursework and the midterm test, including the voluntary exercise 11
 2. all the problems covered in the exercise classes
 3. all material covered by the lecture notes, including reading assignments.

The exam will only be on material covered by the above three items. If you want to know which sections of the textbook have been taught in this course, see the frontpage of all the lecture notes as they are available on the course webpage, where this is stated for each week. If you need more examples, or if you have any specific questions that are not answered by the above material, study your textbook.

- Calculators will not be allowed for the exam. No tables of integrals will be available or allowed, nor will they be needed for solving the exam questions.
- Many students were very sloppy in solving their online and written coursework problems. These students will be in big trouble for the exam, which counts 80% towards your final mark for this course. If you belong to this fraction of students, it is high time to do your job **NOW!** Students failing more than 3 modules will not progress into the second year; see your Undergraduate Study Handbook for details.
- In order to prepare for the Calculus 1 exam, a **revision class** will take place on **Monday, 26 April 2010 from** (sorry) **9.00-11.00** in **Mason Lecture Theatre**. In this lecture we will solve the late summer resit exam 2009 as an example. Please note: Model solutions for this exam will not be made available - come to the revision lecture if you are interested in the solution!
- From April 8 until May 11 I will have **office hours** on **Tuesday and Thursday from 14.30-16.00** unless stated otherwise. Please check out my homepage for any latest update about my office hours.
- **Please note:** More information on this exam than provided in these notes and on the course webpage *will not be given out to students!* Particularly, I will not give specific exam hints to single students via e-mail or otherwise. This would not be fair towards all the other students.

Good luck!

2nd April 2010

Rainer Klages