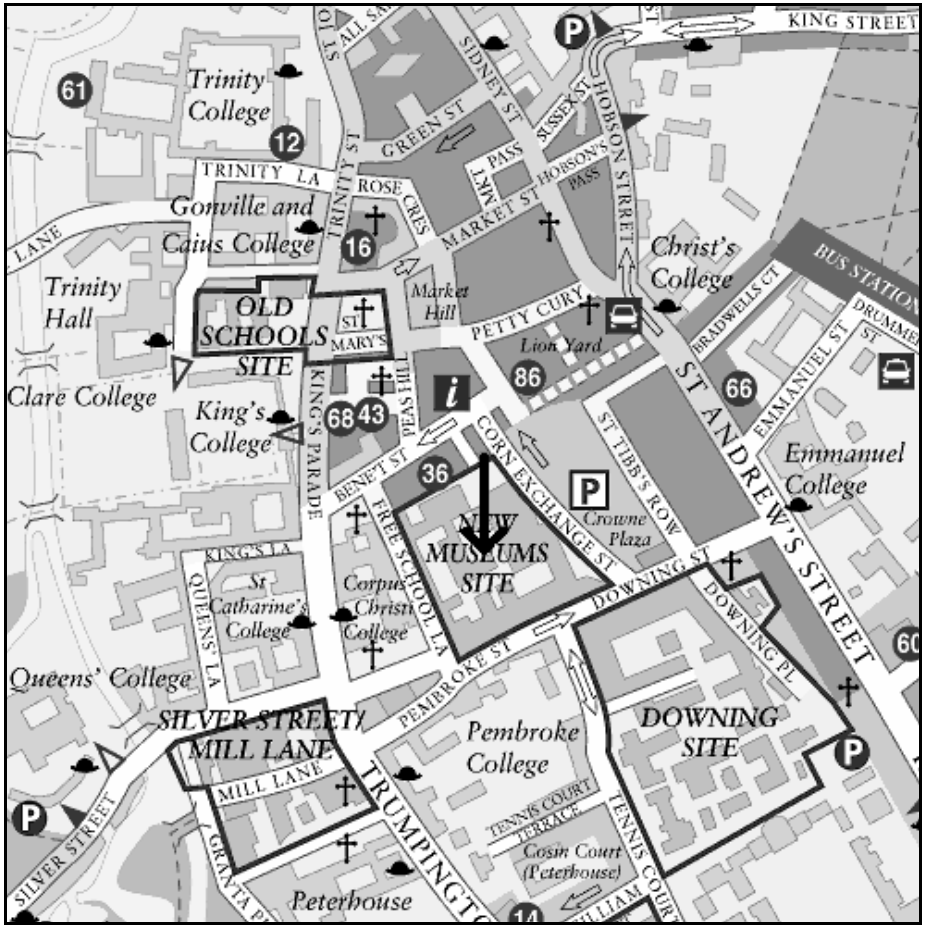

Map: © Cambridge University Press and Cambridge University Computing Service 1997-2005

Finding your way around

First year lectures are held in the Cockcroft Lecture Theatre in the New Museums Site. You can get onto the site from Free School Lane and Pembroke/Downing Street, as shown in the map above. Once in the site, the Cockcroft is reasonably well signposted.

Your lecturers will be from DAMTP (the Department of Mathematics and Theoretical Physics) or DPMMS (the Department of Pure Mathematics and Mathematical Statistics). Both departments are located in the Centre for Mathematical Sciences, which is a 15 minute walk to the west of the city centre, on Wilberforce Road.

There is a joint library on the Centre for Mathematical Sciences site, open to undergraduates for reading (not borrowing). The library can be a good, quiet place to work, and there are plenty of computers available there as well. The CMS café provides pastries, snacks and drinks to sustain you while you work.

The Alternative Guide to Mathematics at Cambridge

Greetings and congratulations. Unless this guide has been stuffed into the wrong envelope, you are soon to be a first-year mathematician (or *mathmo*). Going to university for the first time can be something of a culture shock and so can the Mathematical Tripos; this guide is intended to make life a little less confusing when you start. It is brought to you by the Archimedeans (the University Mathematical Society).

Settling in

Now that your place has been confirmed you will soon be assigned a *Tutor*, who is unlikely to tutor you and probably isn't even a mathematician, but who is responsible for your welfare. You will also hear from your *Director of Studies (DoS)*, who will arrange your teaching within your College and whom you should consult if you have any academic problems. In addition to College tuition, the University is responsible for teaching you in the form of lectures. Shortly before lectures start there is an introductory lecture given by members of the Mathematics Departments and students. It would be a good idea to attend this to practise getting up early and finding the lecture theatre, as well as to find out how to get the most out of the course.

Lectures

Once you've arrived, unpacked, found your kettle, met your neighbours and one thing and another, it'll be about time to start going to lectures. In your first two terms, you're likely to have two one-hour lectures starting at 10am each day, six days a week.

An important question is that of how to make the most of maths lectures. A few lecturers provide notes for the course, either on the internet or as handouts. Otherwise (or sometimes even in this case), the most common technique is to write down at least everything the lecturer writes on the board. It's also a good idea to make notes on any spoken explanation of sections that seem to need it. To be fair, it can be hard enough to keep up with what's written on the board, let alone listen to what the lecturer is saying. You'll gradually find your own way of dealing with this, but as a starting point, we strongly recommend arriving at lectures on time, awake and well-fed. Even if you manage to make perfect notes, it's still useful to review your notes soon after the lecture, to ensure that you've got to grips with the material before the next lecture. You might like to set aside some time each day for this.

Supervisions

For each course, the lecturer will hand out examples sheets every so often. Examples sheets are so called because they have a set of problems for you to solve and no examples! Particularly difficult problems may be starred and there may be optional questions. You will not be expected to be able to answer all of the questions, so don't be worried if you can't.

At the start of each term, your Director of Studies will arrange a series of supervisions for each lecture course. You will usually be paired with another student for these, and the supervisor may be a graduate student or a research fellow. There will be one supervision for each example sheet, and supervisors often ask for solutions to be handed in beforehand. It's worth preparing a list of questions, or areas of the course that you would like clarifying, to bring up in the supervision. Do remember that supervisions are there to help you, and it's best to mention any problems you have with the course rather than trying to impress the supervisor. Also, if a particular supervisor isn't helping you much, or if you are ill-matched with your supervision partner, talk to your Director of Studies.

The Maths Tripos (Exams)

Cambridge has its own curious vocabulary, which you will get to know sooner or later. A *tripos* is a degree course (supposedly because candidates for examinations originally sat on three-legged stools). Most triposes come in three parts: Part IA (first year), Part IB (second year) and Part II (third year). Maths also has an optional fourth year, Part III. Part IA comes in three different flavours: Pure and Applied Mathematics, Maths with Physics, and Maths with Computer Science. After Part IA, you get to choose whether you want to stay with Maths or switch to Computer Science or Physics. If you want to change which flavour of IA you are doing, talk to your Director of Studies.

It is unfortunate that the University require us to sit exams before they will grant us degrees, but since they do, here's a brief word about IA exams. Firstly, they don't count towards your degree, but your college will probably insist that you obtain honours (a first, second or third) to continue with the Maths Tripos. This doesn't mean that you can relax, though; many employers wanting students during the vacation will ask for your results for each year of your degree.

The IA exams are at the start of June and consist of four three-hour papers covering the first two terms' work. Lectures stop a week or so before the exams so you can concentrate on revision. It is important to have done lots of past papers so you have practice pacing yourself and selecting questions you are good at. Past papers are available on the internet, in your College library or from one of the Maths Departments. You are likely to be given revision supervisions on past papers in the Easter term. Exam results are usually posted on the notice-boards outside the Senate House at the end of May Week.

The Archimedeans' Patent Survival Kit

In which we present some of the notation which lecturers use but don't always define:

WLOG	Without loss of generality	$\forall$	For all
WMA	We may assume	$\exists$ ($\exists!$)	There exists (a unique)
RTP	Required to prove	$\mid$	Divides exactly
STP	Sufficient to prove	$\lightning$	Contradiction
TFAE	The following are equivalent	QED *or* $\square$	End of proof
Theorem	Important result	$\in$	Is a member of
Lemma	Baby theorem	$\subseteq$	Is contained by
Corollary	Follows from preceding theorem	$\subset$	Is contained by *or* is strictly contained by
s.t. *or* :	Such that	$\varnothing$	The empty set
$\Rightarrow$	Implies	$\{v_1, v_2, ...\}$	Set
$\Leftarrow$	Implied by	[a,b]	Between a and b inclusive
Iff *or* $\Leftrightarrow$	If and only if	(a,b)	Strictly between a and b
:=	Is defined to be	[a,b), (a,b]	Use your imagination!

If a lecturer uses notation you don't understand, or you can't read something they have written, then it's a good idea to ask for clarification, because other people are likely to be having the same difficulty.

Useful links

Maths Faculty: http://www.maths.cam.ac.uk/faculty/
The Reporter: http://www.admin.cam.ac.uk/reporter/
Lecture lists will be published here as a special number shortly before the start of term.
Student Reps' Website: http://www.damtp.cam.ac.uk/user/studrep/
Their links to lecture notes and example sheets are particularly useful.
The Archimedeans: http://www.archim.org.uk/
Official Map: http://www.cam.ac.uk/map/
Responsible for the map overleaf. Very useful for finding your way around.

The Archimedeans

Who, then, are the Archimedeans? As well as publishing this guide, we organise speaker meetings given by eminent mathematicians on all aspects of mathematics. Last year's talks included *"Risk, Chance, Gambling and Probability"* by Dr Simon Singh, *"How to Beat Children at their Own Games"* by Prof John Conway and *"The Music of the Primes"* by Prof Marcus du Sautoy.

We also have various social events throughout the year. In your first term here, you'll be able to join us in a Puzzle Hunt and at our Christmas Party, and in February we hold a Problems Drive, to which members of the Oxford student maths society are often invited. During Easter term, we have a punt trip to Grantchester, a Garden Party and a croquet match.

Members receive the Archimedeans' journal *Eureka*, which is published annually and has an international reputation. We also run a well-stocked bookshop, which buys and sells second-hand maths textbooks at approximately half the retail price. Many of our members save the cost of membership on this service alone.

You can sign up to our email lists at the Societies' Fair at Kelsey Kerridge, and/or buy membership at our squash, which will be announced in lectures sometime during the first two weeks. At the squash, you will have the opportunity to enjoy some light refreshments, meet the committee and take advantage of the bookshop.

Before you get here

If you're keen to sign up to the e-mail list before you get here, you can do so by e-mailing *archim-registrar@srcf.ucam.org* and we'll add you now, and ask you for your Cambridge e-mail address once term starts.

Also, check out our website at *http://www.archim.org.uk/*, where you can find further information about our activities and services, and details about membership.

Other than that, our contact details are as follows:

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