MATHEMATICS

Dear first year mathematician,

Congratulations on making your offer, and welcome to Downing! I’m Leo, a third year mathematician (or mathmo, as we call it in Cambridge), and I’m sure I will see you at the subject talk at the start of the year. I hope to give you a quick introduction into mathmo life at Downing, helping you settle as smoothly as possible.

So what can I expect from studying Maths at Cambridge?

One of the first things you will notice about studying here is that the learning style is quite different, and it will take some time for you to find your speed. At high school it you might have found it enough to listen to the lesson, take it in first time, and then do some textbook questions before you’re confident that you can do it. Cambridge lectures contain a lot of information, sometimes given quickly, so don’t worry if you find yourself a bit at sea. It’s normal not to understand everything (or anything!) first time round.

“You don’t learn in lectures – you learn from lectures”

In other words, the time you spend after a lecture, reviewing it, reading your notes (often line-by-line, writing them out again if you have to), and doing the example sheets, are where your knowledge really sets in. The link at the end of this letter could give you some ideas of how to approach lectures (asking some other mathmos may help too). One should also note that while lectures in maths are technically optional they are highly recommended, and not attending means that you have a lot more to catch up on, in addition to existing work.

How is the Maths Tripos structured?

The first year is called “Part IA”, the second “Part IB”, the third “Part II”. In IA, you will take all 8 compulsory modules (4 Applied, 3 Pure, 1 Probability, all 24 lectures). You’ll do 4 of them in first term (Michaelmas) and 4 in second term (Lent), with the third term (Easter) reserved for exam revision and some optional 12 lecture IB courses. IA lectures are from 10am-12pm, Monday to Saturday, and last 50 minutes each. Every ~6 lectures, you will be given “Example Sheets” that cover the content. You will do them and hand them in to your supervisor, who will mark them and review them with you in supervisions (typically 2-on-1). You will have the chance to ask any questions about the topic.

It is important to note that sometimes the style of the example sheets and the lectures differ. Some questions require you to use the results and formulas arrived at in lectures, while others need techniques used in proofs, or some inspired thinking. One tip to save you time trudging through every word in the notes is to identify what you are being asked to do, and know what part of the lecture notes to use.

How will I spend my time?

You will be told to treat your studies as a full-time job, i.e. put 40 hours into independent studies, outside of lectures and supervision. While this is a good rule of thumb, you may feel better doing more or less than this. It’s important to note that the amount of time spent studying effectively is far more valuable than time spent just studying. That is to say, 5 hours of focussed studying per day, split up into small bits with regular breaks, is a lot better than 10 hours spent constantly staring at the questions (source: experience). Remember that you are a human being with only so much energy allotted each day, and other aspects of your life to tend to. You’ll benefit from having a game
plan which incorporates periods of rest and other activities, such as sports and social events, eating well, and sleeping enough hours. Each person will have peak energy times during the day, so it may be worth noting when yours are, and scheduling your study accordingly (9-5 may not suit you, evening studying is fine, although all-nighters are not recommended).

**How should I prepare before I get here?**

Reading relevant textbooks before coming here is helpful in showing you what to expect before coming here, but it will not disadvantage you when you get here, provided you are diligent during term.

The main two supervisors who you will be getting to know are Gareth Taylor (Pure) and Kerry Maunder (Applied). Each of them will provide you with a question set before you get here, and it is recommended that you complete as much as you can before you get here. Freshers’ week is a busy time, and you will benefit from the freedom to focus on the lectures when they start before you start the example sheets. These sets will give your supervisors an idea of your style, and will give you a feel for maths again after a long summer of rest.

**Okay, I’ve heard enough of Maths. What about Downing?**

For many, moving away from home is a big step. Fortunately, when you arrive at Downing you will be greeted by a friendly student body, and a welcoming group of Fresher Reps, who will help you settle into your first week at Downing. You will be living in one of the great first year accommodations in college, and whether you’re in Howard Lodge, Griphon, Kenny A/B, or J Staircase, you can expect to meet a great group of people. The halls and corridors where you will live quickly foster strong communities, and in Downing there is great integration across all years.

Dinner hall at Downing is affectionately called “slops”, and each accommodation is equipped with a kitchen, so you can choose what you want for dinner. There is a great open space in the middle of college, with a large green area called the Paddock, where you can play sports and socialise. You have access to two tennis courts (bookable at the Porters’ Lodge for free) and a gym (subject to a small annual fee). There is also a sports centre and swimming pool barely two minutes’ cycle away (Kelsey Kerridge). The Butterfield Café is a warm, ambient place where you can meet people, have meetings, study, and play pool, all while enjoying some good coffee and food.

**What can I do outside of Maths?**

Downing College is well-known for strong sporting prowess, and you will attend a fayre in Freshers’ Week where you can join any of these clubs, from rowing to rugby to netball. Sport and exercise are very helpful for keeping a level head while studying, so I recommend you take a look! That being said, there are other vocations in which you can get involved, such as the Dramatic Society which holds plays almost every term, or the Music Society which holds performances and open mic nights in the Butterfield, and sessions in the Master’s lodge. There are also a wealth of societies on offer across the university, from American Football to Tiddlywinks. Whatever your interests are, you are sure to find something just for you!

I’ve said enough for now. I hope I’ve given you more of an idea of what to expect when you arrive. If you have any questions at all then don’t hesitate to contact me or your college parent (one of whom will generally be a mathmo). I look forward to seeing you in October!

Leo (lif20@cam.ac.uk)