What is it really like to study at Cambridge University? We asked King's undergraduates to discuss their course and options, the teaching and workload, life in the College, what they do outside their studies, and how they found the application process.

These accounts give detailed and individual experiences of specific courses, but they are worth reading if you're interested in other courses too: they give a range of views about general aspects of being part of the college community and how things work.

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For more Student Perspectives and further information about studying at King’s, please see our website: http://www.kings.cam.ac.uk/study/undergraduate/index.html
Why did you choose Engineering at Cambridge?

I’d always been interested in sciences at school and was leaning towards either Physics or Engineering. After doing some research, I finally settled on Engineering. It was really a teacher at school who encouraged me to think about Oxbridge, and after looking at the Cambridge course I decided it was worth trying to apply.

One of the best things about the Cambridge course is the flexibility. Some people arrive knowing exactly the type of engineering they want to do, but having no first-hand experience of any of the fields, I wasn’t sure. Regardless of whether you know what you want to specialise in, getting to see several fields and appreciate the links between them is extremely advantageous.

What was staring at King’s like?

It’s incredible how quickly you settle into college life after you arrive. It’s daunting the first few days, trying to remember everyone’s names and subjects. Freshers’ week is really well set up though: it’s filled with activities to keep you occupied and help you make friends quickly. Even after the first week, College life encourages people to get to know each other too – you will see the same people throughout the day, almost every day.

I came from a small state school in Scotland, from which there is a low Oxbridge intake compared to others - typically one or two a year. At first I felt at a disadvantage, as unlike people from schools with a strong Oxbridge reputation, I didn’t know anyone when I arrived. However, you quickly realise that the school you came from makes no difference: it’s rarely brought up and nobody really cares.

You quickly realise that the school you came from makes no difference.

I’ve got two college parents, Neil and Lingling, 3rd years studying Engineering and Medicine respectively. I got a lovely letter through from my parents during the summer before arriving, letting me know about college life. They’re the first people to greet you once you’re welcomed into the college; they feed you with family meals and are around to lend an ear over exam stress or to spread those suspect Cambridge rumours. It’s nice to have a friendly face around college outside of your first year group, and somebody to lend you advice from first-hand experience.

How did you find supervisions?

Stepping into my first supervision was really nerve-wracking. I was one of the last to have my first one and had no idea what to expect. It takes a while to get used to supervisions - particularly as all supervisors will have a different style – but in a short spell you begin to know how to get

Supervisions are similar to interviews in style.
the most out of each one. Supervisions are similar to interviews in style but you get to ask questions; you’re not alone and you’ve already been working on the problems. It can be daunting as some of your supervisors are world-leaders in their subjects and may have lectured you, but they’re all there to help, and their expertise keeps supervisions interesting.

Supervisions are as useful as you want them to be. If you turn up having done the work, thought about the lectures, and know what you want to ask before going in, there’s no better way to fortify your learning. However, if you’re unprepared, you will be wasting your, you partner’s and your supervisor’s time. When they’re going well, I’d say supervisions are the best thing about the Cambridge system, and definitely the last thing I’d be willing to give up.

Almost all of my supervisions are based on an examples paper due for that week. The papers normally build on examples you’ve already seen in lectures. Many are taken from hard questions in Tripos (end of year) exams, and they are often designed to get you to think about the problem in a novel way. Some papers can take an hour to finish; for others you may not be able answer everything. It’s important not to waste disproportionate amounts of time on one question. If you get stuck, ask around for help or take it to the supervision – that’s what they’re there for!

How does the rest of the teaching work?

There are three terms each year: Michaelmas, Lent and Easter. You’ll have 11 hours of lectures a week every term (12 in Michaelmas if you don’t do the fast maths course), and lectures are only for the first four weeks in Easter term. The Lent and Easter terms are a lot busier than Michaelmas though, as there are fewer non-examinable lectures such as ‘Engineering in Society’ and there are a lot more labs.

Throughout the year you have to complete a certain amount of lab work. Typically there are four labs a week in Michaelmas and Lent, then three a week in Easter term. The work will be made up of short and long labs, as well as larger projects such as the Integrated Electrical Project. For long labs and projects you have to write up reports at the end, due for within two weeks.

You get marked for lab work, but it’s all done through the notorious standard credit system. This means that you don’t have to stress too much about lab reports or getting the right results: as long as you turn up and make an effort you’ll get the marks. It’s worthwhile getting into the habit of writing good reports though, as in third year there’s no standard credit.

The projects are normally the most enjoyable (and sometimes frustrating) labs. The structural design course was a definite highlight this year: getting to design, build and then destroy your constructions was a lot of fun.

Did you have a gap year?

Yes, I had a gap year. Initially, I wasn’t sure if I wanted to wait, but I’m glad I did as gaining work experience and saving some money were useful. I worked in an engineering company up in Aberdeen.
Not only was it handy in getting me to appreciate the industrial side to Engineering, it also took pressure off having to find a job over summer. I would recommend making sure that you take a bit of a break from work or school before you start, even if it’s just a month, as you’ll be working most of the year.

**How did you prepare for the course?**

I hadn’t done anything specifically for Engineering, but I had carried out a Nuffield project and a small assignment looking at optical tweezers at school, both of which I spoke about in my interview. It turned out that one of my interviewers works on optical tweezers, cue some difficult questions! In my year out, I completed the Loughborough Maths course (half funded by King’s) which helped keep my maths up to scratch, although in retrospect, I wish I had done more to sharpen my maths. Before you come, all engineers get sent a preparatory problems booklet, which you’ll go over in your first set of supervisions. It’s definitely worth doing before you arrive so that you can enjoy freshers’ week in full.

**What are Triops end-of-year exams like?**

Tripos exams are not like any exam I’d ever sat before and at first were the most daunting things in the world. The exams are deliberately set to give a normal distribution and so people won’t be getting around 90% like many do at school. You have to accept that you’re probably not going to know everything inside and out and you will be pressed for time. Fortunately in Engineering, unlike many other subjects, we’re provided with cribs and past papers for previous years via the department. This helps with revision, knowing how to approach questions and spotting your weak areas. The best thing is practice – familiarising yourself with the style of the exam and how long questions take.

**What stood out this year?**

I can’t pinpoint a particular subject I enjoyed most, but there have been plenty of highlights. Some of best bits have been Dr. Hunt’s and Prof. Babinsky’s lectures – expect boomerangs, leaf blowers and beach balls! You’ll find that there are little facts and tricks you’ll learn which make you wonder why you did it the long way round in school. Not every lecture will be interesting, but you need to do a lot of ground work in the first two years in order to specialise later.

I studied in Scotland, so one of the hardest things has been trying to catch up with some of the topics taken for granted by people who took A levels. I remember panicking a bit doing one of my first examples sheets when it seemed that everyone else was finding it a lot easier than me.* That’s what supervisions are for though, and soon enough the problems I had were cleared up. You find that everyone has different strengths in different areas and there were things I had studied which others were unfamiliar with.

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*Tripos exams are not like any exam I’d ever sat before.*

*Expect boomerangs, leaf blowers and beach balls!*

*You find that everyone has different strengths in different areas.*
* Note from the Admissions Office: The Engineering Department provides the following list of Maths topics.  
http://www.eng.cam.ac.uk/admissions/information/maths_advice.html

If you are not taking A levels and your syllabus did not cover some of these, you might like to do some work on them in the summer before you start at Cambridge.

You could also consult A level Maths specifications if you are concerned. For example:  
http://www.ocr.org.uk/qualifications/type/gce/maths/maths/

Is there good support if you hit problems?

There’s a great wealth of support from many different groups at King’s. The engineers in my year are all close – we’re frequently off on engineers’ meals and pub trips. It’s great having that support network as you’ll all have different strengths, and being able to ask someone is normally the quickest way to sort out any problems you might have. For any non-academic issues you’ll find there’s several people such as you Director of Studies, friends or the nurse to talk to. Sometimes having a bit of a rant is all you need to clear your head, but there’s a multitude of forums for anything more serious too. The College has dedicated welfare officers who would be happy to help or point you in the right direction. When you arrive, you’re provided with several numbers and groups you can contact if you want help outside of College too.

Do you know Engineers in other Colleges too?

Because Engineering is such a large course, it lends itself to people sticking to their college groups. Many sit in the same seats so you’ll only get to know the people near you. You find that you will get to know more as the year goes on as colleges organise swaps (where you go for a formal meal in another college) and there will be students at other colleges doing labs with you too.

What is King’s life like?

King’s is always a hive of activity and you’ll find that there’s always something to distract you, whether it’s in College or University-wide. It can sometimes seem hard to do everything you want, but it’s really important to schedule time away from work. Within College, I go climbing and kayaking with King’s Mountaineering and Kayaking Association (KMKA). I’m also part of the University’s formula student team, Full Blue Racing, which is great for applying stuff from lectures in real life. In Michaelmas term, everyone finds themselves signing up to twenty times as many activities as are humanly possible to do, but you’ll soon be able to pick and choose what to do.

One of the best things about King’s is its atmosphere. The College is extremely relaxed and friendly, and there’s always something going on. Not only does this make it easy to settle in, but it also contributes to our renowned formals (special meals in the College Hall). Naturally Cambridge takes students from a large pool of candidates, not just from across the UK but across the world, so you’ll meet people from a whole host of backgrounds.
It’s always great to be able to talk to people about other subjects in College. Chatting to an arts student about their current essay crisis is sometimes exactly what you need to take your mind off of the one question which is still tripping you up. It’s useful too: you learn all sorts of obscure facts and you find that, particularly in the sciences, there are overlaps between the subjects. Discussing topics can help clarify problems and many people swap relevant lecture notes.

**How was the application process?**

I found the application process relatively straightforward: it all went so quickly and I really just followed the steps. At first I fussed for a long time over which college to pick. I had never been to Cambridge and wasn’t able to go down to the open days so the prospectus and the internet were all I had to go by. Honestly, I went geeky and made a spreadsheet all the colleges and had categories rating them on things such as how many years accommodation they offered and distance to the Engineering department. Lots of colleges came out the same so I picked King’s because it was pretty!

I was told before I came for interview that we would sit a physics and maths test. It’s useful to have several opportunities to prove yourself in case one aspect didn’t go well, but I was nervous about the tests as I didn’t know what to expect.

My trip to King’s for interviews was a short one due to train times: as soon as I left my interview I was heading back home. The stay was comfortable though and there were plenty of people around to guide you to your room or interviews. It was nice to meet other applicants and realise that we were all in the same boat.

**Where did you live this year?**

This year I was with most of the first years in Keynes. It’s a great place to live: just a minute away from the canteen, bar and library. Having everyone concentrated in one place means there’s nearly always somebody in the bar to chat to if you decide to abandon work. An en-suite is a nice addition too!

If you make your offer, you’ll receive a letter through the post in early September. This will contain a whole host of forms and administration which you’ll need to sort out – one of which you use to choose where you live. There’ll be practical information provided, but if you have any more questions it’s best to contact your new college parents and ask.

In Lent term, I chose my room for second year in the room ballot. I entered the ballot in a group with some friends so we all went in together to pick our rooms. I’ll be living with most of the second years in Garden Hostel as being in the hub of what’s going on was what I loved about living in Keynes.
I nearly always eat in the canteen unless I miss it, Sainsbury’s has something particularly tasty on offer, or a rare gyp room (kitchen) party is happening. The food is normally OK, although there isn’t always much choice for vegetarians. Eating in hall is also one of the most reliable ways to catch up with your friends and discuss each other’s days – even if this does mean having to listen to medics talking about your macaroni’s resemblance to subcutaneous fat!

Is there work to do in the vacations?

Inevitably, if you want to do well you will have to work during the holidays. In some subjects, such as Engineering, you will be set projects to do over the holiday too, so work is unavoidable. This doesn’t mean that you can’t have fun and relax though. I found that the first week back home was important for just settling back in, re-fuelling and catching up with friends. You’ll find that you need the holidays to properly go through everything from term, as you won’t have had the opportunity during term.

For you to enter into the 2nd and 3rd years, you have to have carried out a prescribed amount of work experience. Around half of all engineers in my year had a gap year - and many, like me, worked. It can be quite difficult to get a placement in first year as most companies want second years or older. Thankfully the department has a dedicated industrial placement co-ordinator who will help you.

What are you looking forward to next year?

One of the biggest labs next year is the IDP (Integrated Design Project). This involves designing and building a robot in small groups, each of which are subdivided into electrical, mechanical and programming teams. It’s challenging, and infamous for causing some late nights in the department, but labs where you actually see your creations working (or sometimes not!) in front you is rewarding and exactly what I came into Engineering for.
King’s Student Perspectives

Mathematics
Felicity, 1st year

How did you come to apply?

I had wanted to study maths for a long time before I applied to university, and since Cambridge has such an excellent reputation for maths, it seemed like an obvious choice despite having to take STEP papers.

When applying it's hard to know what all the colleges are really like and whether it actually makes any difference which college you apply to - I chose King's mostly because of the perfect location, the size and that it looks so nice.

How did you find the transition from sixth form maths?

There is a massive difference between school and university maths. Here, it is all about thinking through problems: it can take several hours just to puzzle out one question on an example sheet, and two questions are never the same. To start with, some of the courses don't seem to be too much harder than some of the material covered in A-level - that is, until you see the first example sheets and need to start thinking very hard about the questions. However, as long as you keep on top of the lecture material and up-to-date with work for supervisions, it is quite manageable. The college parenting system works well, particularly when you're settling in - one of my college parents is a mathmo so could give useful advice at the start, and if I ever get stuck, I can go to ask for help.

What are the first year courses like?

First year lectures take place in the Cockcroft Lecture Theatre in the New Museums site, which is very convenient since King's is one of the closest colleges, and having a very quick walk to lectures in the morning is often a relief if you're running late. I didn't really know what to expect from the courses, as I found that even if I read the course schedule it didn't mean much to me and I couldn't really imagine what we would learn. The courses in first year cover a range of pure and applied maths, which is necessary in order to have a broad understanding before choosing courses later in second year. The range is also interesting.

It would be hard to say what the most interesting thing we've covered in lectures is, as there are just so many fascinating topics, and I've had so much fun from doing some of the maths! I found that the hardest thing about the course was right at the start, when there is a sudden jump from material that you're fairly comfortable with, and then a few lectures later you have no idea whatsoever what it is going on. Fortunately, this is easily overcome by a bit of work. Possibly I found the start of the first term harder to adjust to than others as I did a gap year, so coming back to doing lots of maths again was a slight shock.
What do you think of supervisions?

The supervisions are probably the most advantageous part of the course here. In first year, there are four courses a term, each with four supervisions, so it works out as two supervisions per week. We are given example sheets in lectures and expected to do them and hand them in a couple of days before the supervision so that they can be marked. Then, in supervisions we go through any problems in the example sheet (there are always some), or from the course in general. The supervisions are usually taken in pairs or sometimes individually, and I find that they are incredibly useful and interesting, since you often go slightly further in a supervision than is strictly necessary for the course, but with only two in a supervision, you can go at your own pace and make sure you really understand everything.

What is the workload like?

It is not like school, where teachers would chase you up if you didn't do some work - you have to motivate yourself to do all the work, keep up with lectures, and do the example sheets. Supervisors generally won't waste their time trying to make you do the work if you don't want to. If you don't want to spend a lot of time doing maths there is no point coming here! But on the other hand, if you are really interested in maths then Cambridge is the perfect place to have the opportunity to study maths as much as you possibly can.

Having said that, it is still possible to spend some time doing other things - I still had time to go running every morning, do lots of rowing and spend some precious minutes relaxing in the bar as well.

There is plenty to do at King's and in the university as a whole, for whatever you're interested in. There is so much to do that you have to make the most of it and make good use of every minute!

What are the best and worst things about studying maths at Cambridge?

Possibly the best thing about studying maths at Cambridge is the supervisions, and that you are surrounded by a lot of excellent mathematicians. I find it hard to imagine studying maths without supervisions as they are so vital and stimulating! I can't really think of anything bad about maths here - it could possibly be intimidating to be surrounded by so many other people who are good at maths, but I find it more a relief that there are friends I can ask for help if I am stuck. The only other thing to beware of is the time spent doing maths. You need to be prepared to spend the time studying, but it is interesting and I don't find this a problem at all.
Do you have to do work during the vacations?

The short terms are perhaps the biggest disadvantage of being here - I never want to leave, and spend most of the holidays counting down the days till I can come back! But there is a lot of work to do over the holidays, although none of it is specifically holiday work. It is more a case of making sure that you know all the material covered that term well, and then revising for exams.

What are Cambridge Maths exams like at the end of the year?

The exams themselves are awful (although most people think the same so it doesn't matter too much), and I find it impossible to come out of an exam thinking that it went well, even if it did.

I think that STEP is the only thing that can possibly give you even a vague idea of what the exams are like - it is hard to have to actually think in an exam and not just remember things. I was very worried about STEP when applying, so I spent a lot of time doing past papers for it, and this is absolutely necessary. It also trains you to think in a way that is very different to A-level. So I would advise not worrying too much about STEP: prepare for it as much as you possibly can, but try to enjoy it as well - if you don't like doing the maths it is probably an indication that you shouldn't want to come here!

How did you find the application process?

The application process apart from STEP wasn't too bad. My interviews were all maths-based, and the interviewers do know that you'll be nervous, and seem to give you some leeway if you say something really stupid!

You have a test in the morning before the interviews, so that even if your interview goes badly, if the test goes well they might still give you a chance.

What can you say about King’s in particular?

One nice thing about King’s is that you know the mathmos in the other years, and we occasionally have mathmo socials which are usually good fun. This means that if you're stuck, it is easy to find someone to help as well as the others in your year.

I think that King’s is particularly good for accommodation - it is so close to anywhere you would want to go that anything beyond a 5 minute walk is considered a relatively long way. One of the other things I liked about King’s when I applied was that the first year accommodation is almost all in college, which makes it very easy to socialise and you really feel like you belong to the college.

Now I can't wait to get back to Cambridge after the holidays for second year - for the people, the maths, the sports and that it is just such a wonderful place to study in.
What attracted you to the course?

To study at Oxbridge had always been a goal of mine; I have always felt that in order to be the best at something, you had to study at the best university, which Oxbridge had always represented in my mind. I had to try. I ended up applying to Cambridge over Oxford because of the feel of the place when I got here: quieter, more picturesque, and with the reputation of outstanding excellence in research for several years, a field I had always been curious about. I had decided on studying Medicine from the age of 11 or 12, after a teacher recommended it to me. When it came to university applications, Cambridge immediately stood out. It offered a totally different, traditional course structure, and the idea of being able to concentrate on my studies for three years like any other undergraduate immediately appealed. Firstly I would get to further my scientific curiosity before I became a “real” medic, which I hoped would teach me to think critically about every clinical procedure I would have to do, by evaluating its relevance and importance to the scientific community. Secondly, it could also lead to a much swifter entry into research, an alternative field I had been entertaining, if I decided that this was for me. Having a BSc built into the course was also a bonus: I realised it couldn’t hurt to have an extra science degree under my belt, and other universities offered them on a competitive basis. This took away the concern I felt about not being able to expand my learning in future. It also meant I could carry out research with Cambridge professors if successful... What an opportunity! I couldn’t turn it down.

About the course

I didn’t know that much about the contents of the course when I applied, just the basic topics as set out in the official prospectus. I didn’t quite appreciate the implications of studying biochemistry as a pure (though relevant) subject in first year. I found it fascinating to learn the molecular basis of prokaryotic DNA replication, for example, I just couldn’t understand what we were learning it for! When I studied first year medicine in 2009, I was sometimes lost in the purity of its science – where was the medical backdrop? But this would come in second year, to my relief. I advise being patient with first year and learning it well! A lot of the material is referenced in the second year course, and there won’t be much time to go over things at that stage.

Overall, I found second year so much more satisfying that first year. It’s when the science you have been learning in first year is put into its rightful clinical context. The anatomy, biochemistry, physiology and histology become transformed into pathology, pharmacology, neurobiology and human reproduction, each all-encompassing subjects that enmesh a lot of the first year course into things that will be truly relevant to a medical career. But naturally you have to do the ground work first, which is why I imagine the course is structured as it is. Specific things that I enjoyed include the pathology course as a whole. Although quite intensive (the number of contact hours rival those of first year anatomy), you will turn up to practicals to learn about the pathogenesis of tuberculosis, for example, and how to recognise it by looking at slides made from real life, human samples. And the lecture course is
fantastic; a little bewildering until you get the hang of things, but comprehensive and very clear about what processes you need to understand. My favourites were learning about autoimmunity and transplant rejection – the protective mechanisms going wrong. The neurobiology course I also thoroughly enjoyed. Psychology in Lent term offers new ways to think about how your own mind works, and the practicals even give you some experiments you can perform on yourself to prove them!

**How much freedom do you have?**

As a medical student, there isn’t as much scope for personal choice as other subjects – but that’s the nature of the beast. We wouldn’t be very good doctors if it were otherwise! Things are livened up slightly in second year where you choose two special options from a list of eight (analogous to the Student Selected Components of other universities), which introduces the more interesting and specialist topics which are left out of the main lecture courses. These are really rewarding if you put the time into them. That said, your third year is your BA year (BSc in other universities), and you can choose to study almost anything you wish – I know people applying for Management, Spanish and Law, as well as the more traditional scientific subjects of Pathology, Genetics, Pharmacology, Neurobiology and History and Philosophy of Science among others. This is the year where you can tailor things to suit your interests, and if you are beginning to feel that you want a broader career than traditional hospital medicine, you are encouraged to use this year to experiment.

**Supervisions**

We are really lucky at Cambridge to be offered weekly supervisions by experts in the subjects. Well, perhaps I didn’t feel so lucky to begin with – being faced with perhaps your Director of Studies, the person who co-ordinates the teaching of your subject within college, in your first week when everything is still new and foreign-feeling was a terrifying experience for me. In fact it remained that way for a few weeks! But little by little you begin to find your feet and feel more confident about what you’re learning and saying, and after that it gets less scary, especially if you have a supervision where you’re on fire! If you’re not feeling like that after a few weeks, there are lots of people you can go to talk to about it.

I was slightly surprised to find, during my supervision, that it was a lot like my interview – I suppose they want to know what you will be like to teach. It was not like a class in sixth form: there is a much greater emphasis on discussion. You are asked a question and you must figure out the answer from the week’s material. It’s a lot more satisfying than a class, as with the right supervisor, you find yourself thinking independently, constructing arguments on the fly, and moving away from simply taking what people say to be true. But in order to get the most out of supervisions, you are expected to come prepared. That means being up to date with the week’s lectures and armed with any questions you had while reading up about them afterwards, as it ends up a waste of both your and the supervisor’s time if you are unable to interact fully. BUT don’t worry if this sounds a little unattainable; supervisors know there won’t always be time to prepare for supervisions as well as attend lectures, practicals, write essays, take time out for yourself and

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friends, and participate in any societies you join. I think I have only a couple of supervisions per subject per term where I feel on top of my game. The trick is not to panic, and just try to fit in as much as you can without torturing yourself. Don’t let yourself be put off by feeling like you’re falling behind (in Medicine, everyone is behind!). There is time during the holidays to catch up on anything you may have neglected (as long as you do try to keep on top of things during term time).

Your weekly timetable

First year timetable:

• Michaelmas term = 10 lectures (1 hour), 2 dissections (2 hours), 1 physiology practical (2 hours) per week, 1 histology class (2 hours) and applied anatomy sessions (2 hours) every two weeks. 2 biochemistry PBL (problem based learning) classes per term and one PfP (Preparing for Patients) briefing and visit. Total: 18.5 hours on average per week. No Saturday lectures.

• Lent term = fewer lectures per week as the statistics and sociology modules are examined this term.

Michaelmas term in first year is pretty intensive but this is because there are three parallel, smaller modules going on which are finished early in Lent term. These modules are Sociology, Statistics and Preparing for Patients (where you visit a GP’s surgery in Michaelmas and Lent), but they’re much less work than the core subjects. You should try to spread your time evenly between all subjects, and not just spend all your time on anatomy as it is tempting to do!

Second year timetable:

• Michaelmas term = 9 lectures per week (1 hour), 2 pathology practicals (2 hours), one neurobiology practical (2 hours) and one pharmacology practical (3 hours) per week. 4 NHB (Neurobiology and Human Behaviour) practicals per term (2 hours). Total = 19 hours per week on average. No Saturday lectures.

• Lent term = fewer practicals but the number of lectures is about the same. However, most of the material is covered in Michaelmas term, with the last two weeks of term being filled by special options lectures.

• Easter term = no more core lectures or practicals, just revision sessions. Lectures for special options papers continue.

Practical issues

In first year, almost all lectures and practicals are on the New Museums site or Downing site. In second year, most lectures are on the New Museums site on Free School Lane or Downing site which is along Tennis Court Road, both a five to ten minute walk from King’s. Some of the pharmacology lectures are in the pharmacology department half way down Tennis Court Road, a fifteen minute walk from King’s bar. Some pharmacology and pathology lectures are in the Chemistry department at the end of Tennis Court Road, a twenty minute walk from King’s bar.

All the text books you will ever need are in the King’s library.

All the text books you will ever need are in the King’s library (handy since the faculty library is allegedly at Addenbrooke’s hospital). Anything that’s missing or needs updating can be purchased through the library’s request system.
The application process

The application process is pretty tough! You have to plan everything so far in advance as a medic, what with planning work experience, extra-curricular activities to participate in*, personal statements to write to impress, and that’s all before the interview if you get one! But it’s all part of the challenge, almost a rite of passage. When the interview rolls round, be prepared for some pretty mean science discussions: the emphasis falls away from asking you why you want to be a doctor to delving into an aspect of your A-level course or a reasonable medical or scientific situation that you haven’t previously considered in such detail. You’ll be expected to work through it. There is no right answer; as long as you show signs of active and engaged thought, though, you’ll be at least part of the way there.

*Note from the Admissions Office: when we assess applications in Medicine we are aware that it is not always easy to get relevant work experience placements. Whilst we encourage students to explore their interest in the subject there are many ways of doing this and there are no work experience or extra-curricular requirements. Remember that Cambridge Medicine is a hard science course so the more work you can do to develop your understanding in your science subjects, the better.

Is there time to do other things?

I found that you have to fight a little for free time. But it’s so SO important that you do. You really can’t expect yourself to work through every hour you’re given for a whole year. Trust me, I tried. I found that coxing (rowing) is a good outlet. I hadn’t tried it before but the boatie bunch are so great – committed without taking it unnecessarily seriously. I also helped out in the Chapel in first year which was so awe-inspiring, it really took my mind off things whenever I was there.

In second year I had a more administrative role in the Boat Club, meaning that a lot of my free time was taken up with organising things. It was then that the friends I had made in first year became particularly important. They’re such a nice bunch! I haven’t found anyone in King’s that I thought difficult to get on with, but the friends I have made are particularly supportive. I think everyone is careful to look out for each other, given that we are all under pressure. This particularly goes for the other medics in my year. Being a small number of just eight, we can’t fraction off into cliques as in some other colleges. And we all spend so much time together in practicals and supervisions that it’s difficult not to get to know each other. I’ve been quite lucky in having such a lovely year – we all make an effort to spend time with each other!
Do you need to do a lot of work in the vacations?
(Cambridge terms are eight weeks with long vacations between them)

Vacation work really can’t be emphasised enough. It sounds a little unfair, given that you work so intensely during term time – you’d think we deserved a little time off! But it really is the strength of the Oxbridge term system. Eight weeks really isn’t enough time to learn things as thoroughly as you need to retain information for the medical career ahead. You HAVE to use the free time over the holidays wisely as a medic, or come Easter term when both Michaelmas and Lent feel like very long ago, and there will be too much to learn in the time you have. The way I manage it is to have a structured break, like going away with family or friends, right at the start of the holidays so I can rest and forget about Cambridge for a week or two. One year this involved just wasting time with my boyfriend for a week. Then, when the holiday is over, I settle down to work, starting by drawing up a list of problem areas that I’ll go through first. I take breaks regularly to see friends and catch up – which is just as important as working. But naturally a little more time goes to work, until I’m happy that I actually understand things, to the point where I could explain it clearly to a family member. You only need to do this during the Christmas and Easter holidays after all – then you have three months of summer holiday to actually forget about work! It’s pretty intense, and you have to be disciplined, but the feeling when it all pays off at the end of the year is like nothing else, I assure you.

I take breaks regularly to see friends and catch up – which is just as important as working.

It’s pretty intense, and you have to be disciplined, but the feeling when it all pays off at the end of the year is like nothing else, I assure you.
Why did you want to study Maths at Cambridge?

I always thought I would like to go to university and in my first year at sixth form I got involved in doing UKMT team maths challenge, AEA and similar things. I began to really enjoy doing maths.

I decided I would like to study maths at uni but Cambridge was a bit of a wild card in my application. I didn’t think I had that much chance of getting in. I am so glad that I took the opportunity to apply though, because Cambridge is a great place to become obsessed with maths. Cambridge was a bit of a wild card in my application.

I almost didn’t apply to King’s. I changed my application from Clare to King’s the day before I sent my UCAS form off. I had only been to Cambridge before when I was five so I found it quite difficult to find reasons to choose a particular college. I chose King’s because the college seemed to be a nice size and have a high proportion of people from state schools or abroad. I’m really glad I applied to King’s as it combines having a big student population with a close community.

How was the transition from school to Cambridge maths?

Work here is much harder than it was at school. However, this is the same for everybody and supervisors / lecturers seem to expect it. I felt that the way I wrote and thought about maths changed a lot over my first year and this was probably one of the major things I learnt. I felt that the way I wrote and thought about maths changed a lot over my first year.

I’m not sure what I expected the course to be like. There is a lot of technical language in maths and I still find it difficult to anticipate what particular courses will be like without beginning to actually learn them. I think I expected more of a jump from the style of maths at school to at university but it was more a gentle meandering. I was originally slightly disappointed that there had been no massive difference in how we understood maths until I looked back at the end of my first year and realized my view of the subject was entirely different.

What is your timetable like?

The first year timetable is two hours of lectures a day Monday to Saturday, and around two supervisions per week. Saturday lectures were a bit of a shock at first but I got used to them and there are none in second year. The length of the second year courses vary and there is a bit more choice. This can mean that the timetable is slightly more uneven and you can end up with four lectures on Monday, Wednesday...
and Friday and only one on the other days. The supervisions are also less even which meant I had to get a bit better at organising my time.

**Where are the lectures?**

The first and second year lectures are very close to King's. The first year lectures are on a site where a lot of natural scientists also have lectures. It was less than five minutes’ walk from my room in first year. The second year lecture theatre is not much further away - between five and ten minutes away from all the second year accommodation. The maths faculty is a twenty minute walk away. The third year lectures are in the maths faculty (called the Centre for Mathematical Sciences or CMS) but in the first two years I rarely had to go there.

**How do supervisions work in maths?**

Each lecturer hands out example sheets throughout the lecture series and these make up the bulk of supervision work. The difficulty of the sheets varies a lot from lecturer to lecturer: some are relatively straightforward, for most I would not expect to finish every question but can do the bulk of work, and some feel like a particularly cruel form of torture.

In supervisions we generally work through the sheets discussing problems that we got wrong or could not do. Personally, I find that supervisions, and particularly doing work for supervisions, is the way I do most of my learning. Maths is really not something you can understand by reading about or hearing about it - a lot of the subtlety is only apparent when you engage with the subject.

**Where do you like to work?**

I work both in my room and in the library. I spend more time working than I ever have before. This means it is really nice to be able to work with other people either collaboratively or just with other people working around you. As a result, I generally prefer to work in the library. The atmosphere of intense intellectualism can get a bit much sometimes though and I find an Agatha Christie in the background can make fluid dynamics a bit more doable. Even when I’m working in my room, I prefer to do it with someone else or keep skype open to check stuff with the other mathematicians in King's and have a bit of a chat.

**What was your favourite paper this year?**

All the exam papers in maths are cross-sectional which means there are questions from a number of different subjects on each paper. I think my favourite course this year was Linear Algebra. A lot of the
objects we studied in this course we had met before so it was really good to get a better idea of how they worked.

**How do you find the work/social life balance?**

The terms are very short which means that lots of people like to do a lot of their learning to really understand a subject in the holidays and allow themselves to get a bit more done outside of work at Cambridge. Personally, I find this really difficult and enjoy trying to understand most of what I am doing as I got along. This means the work / life balance is different to what it was at home.

![I play badminton twice a week.](image)

I do a lot of work with other people and see my friends all the time even if I don't have the time or energy to go clubbing or pubbing as much as I used to. I play badminton twice a week, which is really good fun. The team in King's is not too competitive so it’s a good way to relax. I'm also part of a project called STIMULUS which links students up with schools, which means I have been spending a few hours on a Wednesday afternoon helping out in maths lessons at a local sixth form. This is really good fun and surprised me in how much it helped remind me of a load of maths I had forgotten.

**Where do you live this year?**

This year I live in a hostel in the middle of King's fellows garden. My room is big, light and not too expensive so I love it. Most of my friends preferred to have ensuite rooms which means that their rooms are smaller and newer. There are slightly fewer showers for girls than is ideal (about one for 10-15 people), but that is much less of a problem than I had anticipated.

**What are the best and worst things about studying Maths at Cambridge?**

I think the best thing about studying maths is the opportunity to do a lot of stuff. Three years is actually a really short time to learn about maths so it’s good to get through as much as possible.

![The worst thing is when mathematicians are pretentious.](image)

The worst thing is when mathematicians are pretentious. I may be intolerant because I spend more time with them than others, but some mathematicians seem to be good at creating and believing a whole load of myths about how special maths is. The mathematicians I know are lovely, just try not to get frightened if they tell you maths is the hardest subject in the world.

**Is there a good King’s community in Maths?**

The fellows in King's are really friendly (a fellow is an academic) and my year is a particularly close knit bunch of mathematicians - we're all good friends. I know all the undergard mathematicians.

![The fellows in King's are really friendly.](image)
The guys in the year above are really helpful in giving advice about what courses to take or just to a question I can’t answer.

What have you found hardest?

For me the hardest thing about the course is the computing coursework we have done this year. I never did any programming before I came to university and I’m not very good at it. I seem to spend most of my time debugging code so it’s pretty difficult to stay interested. Unfortunately for me, programming is really useful both at uni and in the dreaded ‘real world’ so I think I’m gonna have to get a bit better.

How was the application process?

Once I got an interview, King’s sent me a book extract to read. Most of the interview preparation I did was reading through this material. I also worked through some past STEP papers.

I stayed over in King’s the night before my interview. This was really good because there were a lot of interview candidates around and there was a good camaraderie between everybody. I had only been to Cambridge before when I was a tiny child so it was really nice to come here and discover that everybody was really normal.

The interview day itself began with a test in the morning. People came out of this test feeling vastly different. Personally, I was a lot less nervous about a test than the interview that was to come. I had two interviewers and the thing itself lasted for about twenty minutes. I was glad to find that nobody asked me why I wanted to come to Cambridge or King’s because I didn’t really know how to answer those questions. What they asked me about was maths, and once the first flurry of nerves had died down, I began to find the interview quite interesting.

How did you get on with STEP?

I was really lucky to go to a big and excellent sixth form college which had sent people to Cambridge before, which meant that my teachers were really helpful.* Initially STEP was the part of the application process which I was most confident about, but as I began to try full papers, I realized that STEP was a big challenge and worth putting time into. Like the interview, the STEP papers can become more interesting if you put the time in.

* Note from King’s Admissions Office: If your school cannot offer support for STEP this is nothing to worry about. See the information on the Maths Faculty website about preparing for STEP. (http://www.maths.cam.ac.uk/undergrad/admissions/step/)
What advice would you give to sixth formers?

Doing maths at Cambridge is made a lot more difficult if you don't love maths. When I first began to enjoy doing maths, I also started to enjoy reading about maths. I found Marcus du Sautoy and James Gleick have written some really good books about maths and mathematicians. Many people feel that it's more important to learn to do some maths but that can be really hard to do on your own, and I think it’s interesting to see what kind of thing you might want to learn about. The other good way of getting to know maths is to get involved in some of the competitions UKMT runs, like the maths challenge, team maths challenge etc.
King’s Student Perspectives

Natural Sciences (Physical)

Jonny, 2nd year

What attracted you to the course?

I came to King’s looking for a challenge. I was ready to commit to science after enjoying it at school but wasn’t ready to commit completely to physics, making the Natural Sciences Tripos perfect for me with its breadth.

And how did you find it when you got to King’s?

I found that although what I’d enjoyed about physics was still present, it was the other new subjects that caught my interest. I chose Computer Science and Materials Science despite them both being completely new to me. The former proved fascinating and rewarding. Weekly assignments that at first seemed impossible were satisfyingly eventually overcome. The latter showed me how theoretical knowledge could be applied, grounding the physical sciences in a reality and promising the potential to change the world in a very direct way. The practicals in particular linked lecture topics such as crystal structure to real life phenomenon such as the stiffness of an object. Although the conclusion reached wasn’t always the right one (or reached without a little creativity with results) the advisors were always eager to help.

What did you find most difficult initially?

At the start of the year the pace and intensity of the weekly work cycle proved intimidating but became second nature before long. One of the most shocking parts of the transition from sixth form to Cambridge was the lack of positive feedback. Getting a question right meant barely addressing it in a supervision whereas mistakes were poured over until the root of misunderstanding was found. It took me a while to realise that this was a strength rather than a weakness of the teaching - supervisors are interested in working with me in a more thorough and genuine way than I experienced in sixth form. Criticism was as much a sign of respect and persevering will to see me improve as a student. Once I established that criticism of my work doesn’t equate to criticism of me, I found that the Cambridge system was far more rewarding than anything preceding it. Getting a question right becomes a genuine pleasure. Once I had relaxed and begun to adapt to the idea that the answers would require a little thinking I started to really enjoy supervisions.

Weekly assignments that at first seemed impossible were satisfyingly eventually overcome.

The pace and intensity of the weekly work cycle.

The practicals in particular linked lecture topics such as crystal structure to real life phenomenon such as the stiffness of an object.
At Cambridge you are pushed outside of your knowledge comfort zone and almost forced to figure out new applications for skills you've learned in topics you may have thought entirely unrelated. My lateral thinking developed more than anything, constantly building cross links between new and old material. These links are central to doing well in the Cambridge system, as is learning when to stop.

When to stop?

Whereas in sixth form attacking a question with all of the methods that were hinted at would do the trick, in Cambridge it was evident that a different kind of persistence was required. When working so intensely it's easy to let work become your life. Extra-curricular activities such as photography really help to keep a little sanity, as do trips to the botanical gardens etc.

What keeps you going?

I also learned this year that passion was essential - I wasn't limited by mental faculty so much as desire to read past the lecture notes and engage with my subjects. I took HPS (History & Philosophy of Science) in 2nd year which swiftly bloomed into my favourite topic - I started understanding why I had come to Cambridge to do science when I saw the central role it plays in society and civilisation.

How would you advise students to prepare for the course?

There are a few things I wish I'd done before arriving to make first year a little easier. A strong background in maths would have helped me a great deal as I struggled to understand the basic concepts which enabled understanding of the more complex and far more interesting physical concepts. I'd primarily recommend enjoying the summer before coming but also on brushing up on calculus, two activities that hopefully aren't mutually exclusive. I'd also prescribe a dose of learning how to learn for anyone coming up, reading anything on study advice that looks a bit relevant. One of the resources that helped the most with Physics was Richard Feynman's recorded lectures and books which explain the world through analogies. These lay a foundation for the maths which I found to be too abstract on its own. This reflects my own learning style, one of relating abstract concepts to real world events. Such a practical method isn't suited to everyone but supervisors will swiftly pick up on and work to your strengths.

Supervisors will swiftly pick up on and work to your strengths.

A strong background in maths would have helped me a great deal as I struggled to understand the basic concepts which enabled understanding of the more complex and far more interesting physical concepts.

Final words...

I've no regrets about coming to King’s. The college is of course the best (everyone’s is) and has a real personality of its own.
King’s Student Perspectives

Natural Sciences (Biological)
Jenny, 3rd year

Natural Sciences is a big subject, with 15-20 students per year at King’s, so that makes it easy to find friends and settle in when you first arrive. The college system means you also get to meet lots of people from other subjects too, which makes life more interesting. When I applied for Natural Sciences, I thought I wanted to do Chemistry. I’ve recently finished my final year, and I ended up specialising in Genetics, which I think demonstrates a real strength of the course- you get to try a range of subjects in first year and find out what they’re like at university before you focus on just one subject. I found the biological subjects in particular were quite different to Biology in school, and much more interesting!

What first year options did you take?

In first year, everyone has to take three science options and one maths option. I took Evolution & Behaviour, Biology of Cells, Chemistry and Mathematical Biology. Evolution and Behaviour (E&B) was my favourite- we watched lots of clips from David Attenborough programmes in lectures, and learnt about weird things that some animals have evolved to do. For example, did you know that male clownfish change sex when the dominant female clownfish dies? That would have made ‘Finding Nemo’ a very different film if it was biologically accurate… We also learnt some more theoretical stuff about evolution, a lot of which is explained in quite an accessible and interesting way in popular science books. I’d recommend reading something like ‘The Selfish Gene’ by Richard Dawkins (don’t worry, although he has some controversial views on religion, he’s quite good when he sticks to talking about biology) or something by Sean Carroll or Stephen Jay Gould. They’re interesting to read, will give you an idea of the kind of things in the course, and should help to prepare you for first year E&B. Not to mention that reading around your subject is the kind of thing that looks good on a university application form.

As for my other options, I found Biology of Cells to be a lot of work, with endless names of genes and enzymes to learn, but if you learn it well in first year, it’ll make your life much easier for courses in later years. It’s really worth going over your notes and doing a bit of revision over the Christmas and Easter vacations to try and remember all you’ve learnt during the term. Mathematical Biology is more interesting than it sounds. The maths isn’t that much harder than A level, the difficult bit is working out what to do, and what the answer means in a biological context. Mathematical Biology is also the subject where it really pays to take good notes in lectures (so why they schedule the lectures for Saturday mornings I’ll never know…). Chemistry is really well taught in first year- the best lecturers I’ve ever had were in first year Chemistry. That’s really important, because some parts of the course are hard to teach (like thermodynamics) and some can be a bit dry (like reaction
mechanisms). After first year, I decided I didn’t like physical chemistry much, and I’d rather learn about clownfish!

And after first year?

I based my second year choices on what would best prepare me for what I’d then decided I wanted to do in third year: Genetics. I really enjoyed my final year. The genetics department is really small and friendly; students and lecturers are on first-name terms, and each year the Part II students put on a Christmas panto, with students doing impressions of the lecturers! In final year, you also get to do your own project in most NatSci courses, and genetics is no exception. I ended up studying the rate of spread of an STI between ladybirds (read: I ended up spending 8 weeks watching ladybirds have sex). The idea was to potentially use the STI to control populations of the invasive Harlequin ladybird, as the infection makes the ladybirds sterile. If ladybirds aren’t your thing, there are loads of projects to choose from- for example, a friend of mine from King’s spent the term making genetically engineered bacteria which produce different coloured pigments, so you can make pictures out of living bacteria!

What is the workload like?

The workload in first year is pretty intense. Whichever options you choose, you can expect 12 hours of lectures, 4 hours of supervisions, and around 12 hours of practicals each week. On top of that, your supervisors will set you work to do - ranging from maths problems to essays - which will add up to roughly 12 hours’ work each week, although it can be quite variable.

Lectures are always in the morning, and unfortunately most first year NatScis have lectures on a Saturday morning. Don’t worry though, you can still find time to enjoy yourself and do other things! I did coxing twice a week (the cox is the one who sits in a rowing boat, steering and shouting at the rowers) and went to formal hall most Wednesday nights.

Do you have to go far?

All the lectures and practicals for Biology are about a five minute walk from Kings. In first year, it took me longer to get out of my building than it took to walk from the front door of my building to the lecture hall! The Chemistry department is a bit further away, but even that’s only fifteen minutes’ walk.

What about books and journals?

The college library has all the books you’ll need, and if there does happen to be a book you need which they don’t have, or even if they don’t have enough copies of the book you need, they’ll usually buy you a new copy, and you’ll have it within a day or two. Also, the standard loan period is a term, and you can renew your books after that - so you shouldn’t need to buy any books. I got through three years without buying a single one!
What are supervisions like?

Supervisions were a bit scary to start off with, because they can be a lot like the admissions interviews, and in fact some of the people who interviewed me later became my supervisors. They get less scary really quickly once you get to know your supervisor a bit better, and also once you realise that your supervision partner doesn’t know all the answers either!

Supervisions are also really useful because unlike the interviews, it’s also your chance to ask your supervisor about anything from the lectures you haven’t understood. That makes it really worthwhile looking through your lecture notes from the week before the supervision, and I always put a big red question mark next to the bits I don’t understand, so I remember to ask about them.

All the supervisors are experts in their field, and even the post-grad students are usually at the cutting edge of research: I’ve heard two of my supervisors interviewed on the BBC about their research, and another two have had papers published in ‘Nature’. In some cases, your supervisor will be your lecturer, which can be a bit of a double-edged sword. On the bright side, they know the answer to any question you have, because they gave the lecture (and in some cases they discovered what they’re lecturing you on). On the other hand, if you weren’t in their lecture, or you fell asleep... things can get a little awkward!

I found supervisions most useful for maths and chemistry, where your supervisor sets you questions to answer (a lot like school homework) because for those subjects, practice makes perfect, so it really helps to have someone to look over your answers and explain where you went wrong. In biological subjects, your supervisor will usually give you a choice of essay titles, and give you feedback on your essay in the next supervision. An average supervision essay is about 1000 words, and as a BioNatSci you’ll do around two per week... it’s something you get used to!

And practicals?

As well as lectures and supervisions, science subjects also have practical classes, which usually last a whole afternoon and happen weekly or fortnightly. These are more similar to the kind of experiments done in research labs than the practicals you’ll be used to from school. They try to make the practicals interesting, by giving you a problem to solve: you might work out which bacterial strain caused a pretend disease epidemic, or determine the pattern of inheritance of the white eyes in fruit flies, for example.

Practicals are usually assessed in some way, either by answering a set of questions at the end of the practical and submitting that, or by a written exam at the end of the year, where you have to interpret experimental data similar to what you’ve done in practicals. The practicals are designed to illustrate what you’ve learnt in lectures,
and although afternoons with practicals can seem to last forever, if you’ve got a good lab partner they can be fun.

**Interviews**

The one piece of advice I’d give to somebody thinking of applying for Natural Sciences is not to take anything for granted about what you might be asked in the interview. For example, I didn’t expect to be asked any maths questions in my biological interview, so that came as a bit of surprise! With hindsight, perhaps this was a bit naive, as maths makes up $\frac{1}{4}$ of the first year, and I was studying maths at A level. They did ask whether I’d covered the topic in A level maths before they asked the question though, so don’t worry about admitting you don’t know or haven’t covered something.

In the interview, you can be asked some quite open-ended questions. For these kinds of questions, there might not be a single right answer. The interviewers will be trying to see how you think, so just say what you think, or what you can work out, even if it’s not a full answer. Don’t worry if you get stuck; the interviewer might give you a hint, or a bit more information, until hopefully you get it in the end.

*There might not be a single right answer.*
King’s Student Perspectives

Engineering
Mark, 4\textsuperscript{th} year

**Why did you want to study Engineering at Cambridge?**

Having decided that I wanted to take further the skills I enjoyed learning in the sciences and maths at school, I decided that engineering was for me as it provides a more practical and real-world approach to learning than perhaps a ‘pure’ science would.

I then chose Cambridge due to its reputation for academic excellence in engineering, both in the UK and internationally, and of course for the prestige of attending such a world-renowned institution. What also attracted me to the Cambridge Engineering course was the relatively unique course structure, allowing me to study a wide range of engineering subjects in the first two years before choosing to specialise in the final two years.

**Why did you choose King’s?**

Choosing a college to apply to can be a daunting and confusing experience. How on earth can you get an impression of 31 different institutions, never mind decide on one that’s best for you?! But it really needn’t be stressful. Everyone I’ve met has said that they couldn’t imagine being at another college. Stereotypes do exist of the ‘type’ of people from different colleges, however I would take these with a pinch of salt, as each college tends to be large enough to have a diverse range of people from all sorts of backgrounds, this being especially true at King’s.

It is worth considering the size and location of the college (King’s is medium in size and right in the centre) and possibly any facilities that you are particularly interested in, such as sports facilities, art rooms etc.

Personally, I chose King’s for the simple reason that I knew someone from school who came here a few years before me, and it looks pretty nice!

*Each college tends to be large enough to have a diverse range of people from all sorts of backgrounds.*

Although I obviously haven’t directly experienced life in another college, I would say that King’s is a very open and tolerant place with a strong sense of community within the college walls, perhaps stronger than the impression I get from friends at other colleges. King’s does also live up to its reputation as being fairly politically active (and left of centre), however this is something you can easily opt in or out of.

*King’s is a very open and tolerant place with a strong sense of community.*
How did you get on with the application process?

As I was applying to Cambridge, I had to apply early on in the academic year (the deadline is 15 October). This was fairly straightforward, however they do ask to see all the A-level module marks that you have achieved to date. If you are predicted to achieve the required A-level grades then you should certainly apply and they interview most candidates. There seems to be a great deal of mystery surrounding the Cambridge interview, and although I can’t speak for other colleges or courses I can honestly say I don’t think my interviewers cared where I came from, what school I went to or how long my list of extracurricular activities was. My interview was fairly relaxed and they were simply trying to see if I had a genuine interest and potential for the subject I was applying for.

Specifically for engineering I would recommend gaining some relevant engineering experience outside of A-levels. I personally found the Royal Academy schemes interesting (Headstart, Engineering Education Scheme), and through that I went on to do a Year In Industry between finishing school and starting at Cambridge.

What is the course like?

The Cambridge Engineering course is very theoretical in nature, with a greater emphasis on understanding the fundamental concepts than on the practical applications. The course is also fairly mathematically intensive and although further maths A-level is not a requirement, it certainly helps!

The quality of the lectures obviously varies between lecturers; however a common theme is the impersonal nature of the lectures themselves. With Engineering being (one of) the largest courses on offer at the university, communication in lectures is very much one-way, with little room for student input. But this is where the best part of academic life at Cambridge comes in...supervisions.

Supervisions in Engineering are additional to the lecture courses and laboratory sessions and tend to be in groups of two to four students with a supervisor. You have approximately one, one hour supervision every two weeks on each topic that you study, and the supervisor will expect you to have attempted an “Example Paper”, which is just a problem sheet, prior to the supervision. The supervision will then be structured around the problems you or your group have found difficult. Supervisions tend to be relatively informal and provide an excellent opportunity to go over subject areas that you might not have understood in lectures. In the first two years, supervisions will be held within King’s with one of the Fellows or research students in College. In third year, you will have supervisions organised by your subject group area, and in final
year you don’t have any supervisions at all. I would say that the teaching I have received from the Fellows at King’s has been excellent.

**What does your timetable look like?**

Compared to many subjects at university, Engineering is very structured. In first and second year, you will have lectures or lab sessions in the Engineering department from 9am until 1pm Monday to Friday, with the occasional afternoon lab session. Lab sessions are compulsory, with lectures optional. You will then have about 3-5 one hour supervisions per week. In third and fourth year, the timetable is less structured, with more emphasis on project work and self-motivated learning, particularly in the final year.

**Is the workload manageable?**

It’s easy to feel like there is always more work to do, but I honestly believe that the more things that you get involved in, the more time you seem to have (to an extent of course!). Cambridge is all about being smart about when and how you work. Supervisions are there to help you understand the problem sheets, so if you’re spending more than a few hours on a sheet then it’s a better use of your time to wait and ask your supervisor and move on to the next piece of work.

Being at King’s and Cambridge in general is a fantastic opportunity to get involved in a wide range of sports or extra-curricular activities, and doing so is a great way to make new friends and provide a much needed distraction from work.

Personally, I have played for the university Blues Hockey team for all four years of my course (see website at http://cuhc.co.uk), as well as playing cricket for King’s and going on the annual Varsity ski trips (details at www.varsitytrip.com). Additionally, I was elected to be part of the King’s College Student Union (KCSU), which allows you to have a direct input into the workings of College and to help to improve life for King’s students.

*Note from King’s Admissions Office:* Mark plays hockey at a very high standard but do bear in mind that whilst many King’s students get involved in sport and other activities at College or University level, admissions decisions are based strictly on your academic potential. We do not expect applicants to have impressive extra-curricular achievements.

**How does the course progress?**

Engineering at Cambridge comes in two parts. In the first two years are very structured and everyone studies the same things. The content of the first two years is very theoretical and maths intensive with seemingly little scope for practical application, which meant that personally I found the first two years more difficult. However, it’s worth persevering, as when you get to specialise in third year and especially fourth year, the application of the theory you have been learning starts to become clear and with the huge selection of modules to choose from you can
really tailor your course to areas that you are interested in,. Having the background from the first two years allows you to make a more informed choice, which is a real benefit from the Cambridge course structure.

By far the most interesting aspect of the Cambridge engineering course is the final year major project. This forms approximately half of your final year grade and you spend the entire year working on it. Most projects will have a real practical application, where you get the chance to see the benefits of the work that you have been doing. My final year project was working with Rolls-Royce to develop a new design process for a new generation of aircraft propulsion engine (Open Rotor), but there is an incredibly diverse range of different projects available, and you can even suggest your own.

What next?

My plan is to take a well earned break over the summer and do some travelling before starting the engineering graduate scheme at McLaren in September, which I am really excited about. I do think that I have my experiences at Cambridge to thank for being given this opportunity.

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Student Perspectives: [http://www.kings.cam.ac.uk/study/undergraduate/student-perspectives.html](http://www.kings.cam.ac.uk/study/undergraduate/student-perspectives.html)
Study at King’s (online prospectus): [http://www.kings.cam.ac.uk/study/undergraduate/index.html](http://www.kings.cam.ac.uk/study/undergraduate/index.html)
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