

King's Student Perspectives Engineering

Amy
1st year

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.

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What was starting 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.

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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.

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

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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 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, your 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

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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.

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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?

In retrospect, I wish I had done more to sharpen my maths.

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 Tripos 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

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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.

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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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* Note from the Admissions Office: We're aware of differences in qualification systems and syllabuses both through the application process and when you start your course, and we take these into account. For Engineering, we now provide a support section for prospective students on the maths and physics you need: <http://www.kings.cam.ac.uk/study/undergraduate/subjects/engineering/maths-physics/index.html>.

If you get an offer, you will also have access to the Engineering Department's website for freshers in the summer before your course. This resource is a set of questions so that you can identify any topics that you are not familiar with and do some work on them before you start at Cambridge in October.

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

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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



Kayak polo in King's on the river

You'll meet people from a whole host of backgrounds.

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 and 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

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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!

It was nice to meet other applicants and realise that we were all in the same boat.

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!

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A corridor inside the Keynes Building

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

I entered the room ballot in a group with some friends so we all went in together to pick our rooms.

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!



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Is there any 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.

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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.

June 2012

A note to current King's Engineering students

If you would like to write about your experiences of studying Engineering at King's for our prospective students to read, please email Kristy in the Admissions Office for further details: undergraduate.admissions@kings.cam.ac.uk