Studying Actuarial Science at Cass

This Online Chat session is for anyone who is interested in studying Actuarial Science at Cass. The session will be run by current students giving you the opportunity to ask questions about your subject of interest and find out what life is like as a university student. Throughout the session you can type questions for the students to answer and there will be interactive quizzes on student life and your subject.

Welcome to the Actuarial Science taster session! Now we’ve all introduced ourselves, here’s a quick run down of what we will cover in the next hour...

- A short taster session about disruptive innovation lead by Dr David Smith
- A subject-based quiz
- Advice from our current students
- Q&A. (Any questions you have for our students or staff welcome. Please save your questions for the question and answer session at the end.)
So to begin with please watch this short taster session.

The taster session isn’t about disruptive innovation - that is in the business management room. This one is about the basics of insurance.

I am even doing an online course named ‘Introduction to Actuarial Science’

Hi Rishul,
How did you find the online course?

Hello! I am currently in ALL INDIA XII. I will apply for BSc in Actuarial Science in September 2020. Are there any special skills that I need to get the acceptance from Cass?

There are no particular special skills required. The course assumes that people arrive with the correct level of mathematics both in knowledge and skill but the rest of the course is taught from first principles. As it is hard to get any actuarial work experience before applying for university this is not required. In terms of actual skills you need to love applying mathematics to solving problems. The course deals with risk and finance but if, for example, you love using maths to solve physics problems then this is similar.
It's interesting. I am learning about life tables, mortality rates, transition intensity etc.

That's great to hear.

We hope you found the taster session useful! We will have time for questions towards the end of the session but for now it's time for our subject-based quiz to see how much you have remembered... Don't worry it's just a bit of fun, nothing to worry about. Please note if you're using a mobile please swipe left to see the quiz and if you're using Internet Explorer you may need to click on the question mark to view the questions. Ok here we go...

1. Two men both aged 65 want to buy an annuity that would provide £10,000 per year. The only difference is that one of them smokes. Who would you charge more to?
   a. Smoker 69.23%
   b. Non-smoker 30.77%

Can you plis explain the basic differences between the three types of Actuarial degrees provided by Cass? Is the first year common for all three degrees?

The first year is absolutely the same for the degrees actuarial science (AS), and the Data Analytics and Actuarial Science (DAAS). If you take Finance with actuarial science (FwAS) then a couple of modules are no longer core but we hope students take them. The second year for AS and DAAS are similar as electives on the two degrees mean that you can take almost the same modules. In the third year, DAAS goes into more specific computer-based modules such as machine learning while AS focuses more on actuarial subjects. For FwAS, in the second year there is a significant difference as you move into much more finance focused modules and similar for the third year.

1. The correct answer was b - the non-smoker.

2. Two men both aged 65 want to buy an annuity that would provide £10,000 per year. The only difference is that one of them earned £100,000 per year and the other £30,000 per year. Who would you charge more to?
   a. Higher earner 40.00%
   b. Lower earner 20.00%
   c. Both the same 40.00%

Would you say that the course requires more application of Statistics that Pure Maths?

Yes. We study pure maths to give us the tools to use in statistical models which we then use to solve the problems that we have been set.
Why?

The non-smoker will live longer. As they will live longer we will need to pay out the benefits longer so we need to charge them more money.

2. The correct answer was A - the higher earner.

3. A motor insurance company wants to change its application form to ask the question ‘Rate your driving skill on a scale of 1 to 5 (‘1’ being very poor, ‘5’ being very good)’. Is this a good idea?

<table>
<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Yes</td>
<td>35.29%</td>
</tr>
<tr>
<td>b. No</td>
<td>64.71%</td>
</tr>
</tbody>
</table>

Does the course have electives from social sciences?

No. All the modules are from the business school with a couple from the mathematics department.

3. The correct answer is B - No, it’s not a good idea.

4. For household insurance, which of the rating factors used below is most important?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Location</td>
<td>73.33%</td>
</tr>
<tr>
<td>d. Whether there is a smoke detector installed</td>
<td>26.67%</td>
</tr>
</tbody>
</table>

Hi, is there any books that would be worthwhile reading that can enhance my UCAS personal statement?

Generally its good to see people who are interested in how things work, particularly if there is a maths/stats angle to it. While the book is getting quite old Simon Singh’s code breakers is a good example as it shows how statistical analysis can break many of the old cyphers that were used. Also books on finance/economics also look good. But unless you comment on them then don’t include a large list of books in your personal statement!

4. The correct answer is A - location
5. For travel insurance, would it be more expensive to purchase for someone who is travelling to Croatia or the USA (all other factors being the same)?

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<thead>
<tr>
<th>Option</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>25.00%</td>
</tr>
<tr>
<td>USA</td>
<td>43.75%</td>
</tr>
<tr>
<td>Both the same</td>
<td>31.25%</td>
</tr>
</tbody>
</table>

What kind of work I set. Do we get essays and courseworks. For courseworks, what do they entail?

Hi Rolake,
We do not get many essay type modules. The courseworks are different for each module. Some of them have class tests, while few have take-home group courseworks.

5. The correct answer is B - USA

6. Would a policyholder’s postcode be used when pricing health insurance?

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<tr>
<th>Option</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Yes</td>
<td>88.89%</td>
</tr>
<tr>
<td>No</td>
<td>11.11%</td>
</tr>
</tbody>
</table>

6. The correct answer is A - Yes, a policyholder’s postcode would be used when pricing health insurance.

How did you find the quiz? Did you score well? Next you can speak to our students and also our academic. They will post their advice on how you can prepare for studying at Cass, and feel free to start asking any questions you have as well as we’ll now also open up the Q&A.

Hi, I study maths further maths and economics and I don’t quite know what course I want to do; pure maths, maths and Econ, or actuarial science. So is asking actuarial science the safest option?

Pure maths - it depends on which maths you like studying at the moment. For example, when I studied maths A-level I never liked trigonometric identities but I really liked probability and statistics and calculus. Therefore pure maths was never for me as I wanted to apply maths to solve problems. If you like pure maths the best then there will be little on an actuarial science course. Maths and Econ - good for learning about forecasting and seeing how Government/Central banks use models to make decisions. Actuarial science - a wide ranging degree that applies probability and statistics to problem solving with the benefit that it is aiming you in a particular career direction though not one you have to take.

Can we please receive explanations alongside the correct answers?
I could only supply the answer but post a question on the questions and I will give the explanations

Okay thank you. What type of coursework are they?, do you study a certain company or?

No, we do not study a certain company. It varies for each module. A few of them make hypothetical scenarios and ask you to perform the required calculations. The lecturer would have taught all the required things before giving the coursework.

The quiz was a great! I was wondering what the key differences between courses like finance, actuarial science and investment banking?

Finance courses are usually quite general and are for people who know they want to move into finance but are really unsure about what area. The degree should hopefully let them find out. Investment banking is for people who are certain they want to go in this area and so the degree can be tailored to give them the knowledge of how the markets work. Actuarial science is for those who are mathematically/statistically inclined and want to apply their skills in the areas of financial risk management. While you can become an actuary at the end you will also have skills that are highly valued in any part of the financial world.

What high school level courses are most valuable for actuarial science?

The only one you require is mathematics. Economics is good as some actuaries struggle with the idea that there isn’t a definite correct answer everyone agrees on. Further maths or statistics are both good as they will help you get ahead at the start of the first year. Physics is good as it is problem solving. But any courses are good if they are what you want to study.

How can we prepare for studying Actuaries at Cass?

I would advice you to improve your time management skills. This is the most important thing for studying Actuarial Science at Cass. The course keeps you really busy during term time.

If I were to study actuarial science but then I ended up not wanting to be an actuary. Would you say doing a Mathematics course alone is better for when you want to apply to other jobs?

Certainly not if you want to work in finance as you will gain a lot more knowledge about finance on an actuarial science degree than a maths degree. If you are uncertain whether you want to work in finance/risk management then a maths degree may be more flexible.

Hi! Can you tell us a few things about career progression after graduation?
Hi Sevi! If you look at this link here [https://www.city.ac.uk/careers/your-career/destinations-of-city-graduates?course=BSc_Actuarial_Science&pg=2 204330328, 879564761, 158668007, 2096986644, 158794922]. You can see where our recent graduates at City have gone on to work! It’s a good starting point for looking at careers pathways. Most graduates will go on to be actuarial trainees however others will move on into these fields: investment banking and investment management. Auditing. Commercial banking. Insurance. Financial analysis. Management. Computing and teaching.

Where City graduates work

See where City graduates work after studying at City. Based on Destinations of Leavers from Higher Education survey.

If you were doing the actuarial science degree but decide that an actuarial career was not for you, would this degree still help with other careers and which ones?

Hi Ellie,
Most of the graduate schemes are open for students from all degrees. It all depends on how well you fit within that company. So if you decide not to be an actuary, you could definitely apply for other roles too.

Why would someone travelling to the USA be charged more for travel insurance than someone travelling to Croatia?

Mainly health costs. If you fall ill in USA then your medical bills are going to be a lot higher! Also legal liability is much higher in the USA as well.

I do enjoy pure maths more than statistics however at uni there’s so many proofs which I dislike.

Pure maths to me always feels like proofs which is why I preferred applied maths.

What is the first year’s syllabus for studying Actuarial Science at Cass?

Hi,
The first year includes modules I studied were Financial and Investment Mathematics, Economics, Introduction to Actuarial Methods, Probability and Statistics and Application of IT. They might have changed a bit, but I guess these are the basic ones they should cover.
Hello! My question is: Does a degree in Actuarial science limit you to just being an actuary? If not what other career options are there?

No definitely not! Like I said answering Sevi’s question above many of our graduate have gone on into different jobs not just to be an actuarial graduate. You can go on to insurance, banking, management, computing and teaching and much more. You will find when looking at graduate jobs a lot of the schemes etc in big companies do not always require a certain degree but rather just that you have gotten a degree.

Hi, would you say economics is necessary to take the course or would you be taught the basics there?

Hi,
You would be taught the basics of Economics in the first year.

Is it preferable to study BSc in Actuarial Science or to first do an undergraduate degree in Maths and then postgrad in Actuarial Science?

Again it depends on whether you prefer pure maths. Some students want to study maths for three years and then will study post grad actuarial science so that they can get a well paid job. If you prefer your maths to be more applied and you want to work in financial risk management then an actuarial degree will be more enjoyable.

Is there any way for me to access the presentation that was played at the start

I will send a link to the presentation at the end of the session :) 

when you were choosing a course were you sure that you wanted to take an actuarial science course or were you thinking about maths or economics ect, and what made you come to the decision to choose actuarial science

Hi Jessica,
I was sure that I wanted to take Actuarial Science. I took it because I loved mathematics and wanted to pursue a career which would involve the module.

How would pensions for example fit into actuarial science?

The risks for pensions are demographic - trying to determine when people are likely to die - which is pure actuarial. You also need to invest the premiums in long term investments to generate the best risk adjusted expected returns for the situation. You need to determine how large the fund needs to be to be able to pay the benefits you have promised.

How about placements in the third year? How do we find jobs?
There is a dedicated placements team at Cass that will help you to get a position.

Is actuarial science a very narrow degree? As in, will it limit my access to other financial career paths? And can I become an actuary without doing an actuarial science degree?

Hi,
Yes, you can become an actuary by taking any other degree. Since Actuarial is a professional degree, you would have to clear the Actuarial papers set by the Institute of Actuaries on your own. If you do the degree from Cass, you can get exemptions from few of the papers.

Will I be able to use an AS degree to work as an investment banker?

Yes. The modules you cover at Cass cover many aspects of investment banking. For example, you can do electives in derivatives, fixed income portfolio management, technical analysis, etc.

Is actuarial science a very narrow degree? As in, will it limit my access to other financial career paths? And can I become an actuary without doing an actuarial science degree?

There is no reason why it would limit your access to other financial areas. The skills you learn in economics, finance, financial risk management will mean that you can enter any area.

would you say knowledge in computing/programming is important?

Yes, I would consider it to be a bit important. But during the course, you would be taught programming languages like R and VBA. So you do not have to worry if you do not know a lot about programming right now.

So the ones that moved to the other fields do not meet any problems or disadvantages with employment seeing as they hold an AS degree.

No. You may not cover some areas in as much depth as a finance degree (corporate law, advanced accounting) but you will have a much better mathematical understanding of the markets than a finance degree and more understanding of the financial markets than a maths degree.

Is the Q&A the final portion of this taster session?

Yes :)

In many other universities, they are taking Actuarial Methods in the second year. Is that an advantage or a disadvantage?
Hi, I think it is neither an advantage nor a disadvantage. As long as you are taught about the Actuarial methods during your course, you should be fine.

What would generally be the minimum requirements to get into this course, and is it a competitive one?

The entry requirements for this course are AAA at A level and one of the A levels has to be in Maths. You can find out more about entry requirements here [https://www.cass.city.ac.uk/study/undergraduate/courses/actuarial-science](https://www.cass.city.ac.uk/study/undergraduate/courses/actuarial-science)

**Actuarial Science BSc | Cass Business School**

The BSc (Hons) in Actuarial Science will give you knowledge and experience on stochastic models, finance and financial reporting, business and, naturally, actuarial science itself.

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I want to know the explanation of the motor insurance question where driving speed is asked.

If you ask people to rate their driving skill then a) people overestimate how good they are at driving and b) if people know that the higher they rate themselves then the lower the premium people will lie and say they are excellent drivers to get the lower premium. However, as they are not good drivers the company will make a loss.

Thank you Jainam, if you was to opt for a maths degree, how would you then later progress into an actuarial career, to study for the exams etc?

Hi, if I would have opted for a maths degree, I would have had to clear the Actuarial Papers set by the Institute of Actuaries on my own. I would have to study for Actuarial papers, while pursuing my degree. So I guess it would get a bit hectic.

Is it possible to become an actuary studying other degrees such as finance or banking, or will it be a lot harder?

It will be a lot harder with those degrees as you won't have the mathematical and statistical background. Normally if people become actuaries who don't have actuarial science degrees they have maths degrees, maths and economics or physics degrees. It is possible with other degrees but you have to put in a lot more study upon graduation to get your maths skills up to speed.

Are there any merit specific scholarships given in this course?
Yes but you would need to contact the admissions team at Cass to find out the current ones

do you think work experience in investment banking would be appropriate?

Hi Jessica - yes definitely. Any work experience that you can then talk about how the skills you learned will help you with the course you want to study is always valuable especially in your personal statement

Is this course 100% exams based ?

No.
It is not. Each module has courseworks, however weighting for coursework and exam varies by module.

If I apply for BSc in Actuarial Science and after the first year I want to switch to DAAC or vice versa, so is it possible?

Switching between AS and DAAS at the end of the first year is easy as you have covered the same material. There is always the worry about visa regulations when overseas students change course but we don't think it should be a problem.

How are the exams structured - is it mostly writing or is it even with maths

Hi,
It depends on the module. A Module like Financial Mathematics would involve many calculations, while a module like General Insurance would involve lot of writing.

What are the different types of actuaries?

Life assurance, pensions, general insurance, investment, reinsurance and health are the areas that actuaries work in and are still very much actuaries. We then have 'wider fields' which takes in actuaries who work in areas like project risk management. We also have actuaries working in demography.

What percentage of students would you say achieve an industrial placement out of the ones that applied

I'm afraid I don't have that figure to hand. However I can assure you that we are really dedicated to helping students find a suitable placement. CASS have their own placements team helping you with one to one advice on the application process and an internships and placements fair where they invite businesses in to talk to students about them advertising their placements.

I think that is all my questions. Thank you for answering them so thoroughly and readily!
All the best for your applications

benefits of getting an actuarial/econ degree from cass over another esteemed school such as LSE?

For actuarial science the main difference is that we teach a very practical degree as many of your lecturers are qualified actuaries which is not true elsewhere. Also, as we are based in a business school we are able to offer you many more finance electives than other actuarial science degrees who are often based in either maths or economic departments

Is learning how to code useful

It is but the code you need to learn is taught from first principles. However, if you learn some VBA for Excel before you arrive it will help

if I was to take a relevant course on futurelearn but didn't pay for the certificate of participation, would it still count?

Yes definitely! It's still great to do and you do not need the certificate.

How many lectures do you do in a week on this course?

Hi Mel,
It differs for each year. in the first year you have high contact hours so you might have to attend 20-22 hours per week.
In the 2nd year it would reduce to 15-17 hours per week. You will have to attend 12-13 hours per week in the 3rd year.

Is actuarial science a popular course?

It is not as popular as non-mathematical degrees. It appeals to people who a) know what actuarial science is and b) are interested in maths and finance so we have a more limited pool than other degrees

I do maths, further mathematics, biology and chemistry. Would you say the fact that I do a science combination is a turn off during admission as it suggests I'm not interested in the course as much. What happened was I changed career pathways

Hi - no definitely not a turn off. As long as you have Maths - which you do - that is the only subject specific requirement we have for this degree.

Can I take French modules at Cass along with my course?
Cass does offer the option to learn languages like French, Spanish and Mandarin. But they would be considered as extra-curricular and you do not get any credits for those.

I do maths, further mathematics, biology and chemistry. Would you say the fact that I do a science combination is a turn off during admission as it suggests I’m not interested in the course as much? What happened was I changed career pathways.

The sciences are seen as students who want to know how the world works and so we are more than happy with students who have studied these types of A-levels.

We’ve got 5 minutes left of the session so please ask any more questions you have now. If you would like to watch the presentation played at the beginning again you can find it here: https://www.youtube.com/watch?v=ycipkg8M9mQ

**BSc Actuarial Science Taster Session**

Dr David Smith, Senior Lecturer in Actuarial Science and Undergraduate Course Director for Actuarial Science leads a short taster session about insurance, in...

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could you become an actuary with a software engineering or an type of engineering degree?

You can do. How hard it will be to qualify will be based on how mathematical your particular degree is.

I have tried to take online courses to help me understand what they teach in business and economics a levels

That's great. That should be really helpful to you.

How long would it usually take to become a fully qualified actuary, having passed all exams?

It depends very much on the area that you work. Normally pensions actuaries qualify quicker than life actuaries who qualify quicker than general insurance actuaries. This is all based on how important qualification is in the area e.g. pension consultants earn a lot more when qualified. The IFOA says it takes between 4-7 years to qualify from graduation but some people take less time and some more time.

Would it look better having 4 subjects or is it fine if I dropped one?

It is fine to drop one. The offer is based on three A-levels.
Have you got any suggestions for finding out more about what actuarial science is or a better understanding, so you can decide if it is right for you?

Do try and talk to some actuaries so that you can understand the kind of work they do. Look at the website of the Institute of Actuaries and have a look at the syllabus for the different papers, the kind of sectors actuaries work in, etc

Are you exams more maths based or questions where u have to do extended writing

It varies depending on the module. We have mathematical modules where you will do some writing to explain your results whereas other modules, particularly finance electives, will be mainly writing

Can you pls suggest any free online courses based on Actuarial Science?

I do not know any online courses. But I would suggest you to check the Institute of Actuaries website and see if they have mentioned anything. Do check Courseera too.

In comparison to a Maths degree, is and actuarial science degree popular? How many people attend each lecture usually?

For our degree we aim to have about 70-80 students in a year but the numbers move around quite a lot

Is it useful when applying for jobs, to be fluent in another language? For example, french.

Being fluent in another language is definitely a skill to put on your CV if you have it.) It can also be a great extracurricular to take up. Some jobs and companies may require candidates to be bilingual or multilingual so it can increase the number of jobs you are eligible to apply for. Although it is not essential ;)

Is the acceptance for the main degree low?

If you apply then in most cases we will make the standard offer of AAA at A-level or the equivalent. If you make the grades then you are on the course

Is IELTS compulsory for acceptance?

Which specific books would you recommend to read about actuarial science?
There are no particularly easy books to read on actuarial science. There is a book whose title I think is ‘Against the Gods’ which is an easy read but I would have to check the title and this session is about to end.

The taster session has now finished. Thank you for joining us and if you want any further information about our business degrees do feel free to get in touch.

Which specific books would you recommend to read about actuarial science?
Peter Bernstein is the author