

Balliol College: Balliol College Engineering Science: Professor James Kwan - video transcript.

The tutor, Professor James Kwan, is seated, facing the camera. The tutors' name and course subject are shown the first time they appear. The tutor answers the questions that are displayed on screen.

>> PROFESSOR JAMES KWAN, TUTORIAL FELLOW IN ENGINEERING SCIENCE: Hello, I'm James Kwan. I'm a tutor of engineering at Balliol College. My research interests involve using ultrasound and a phenomenon known as cavitation to address challenges that we face in both personal and environmental issues.

[Question displayed on screen:]

What work do you give to students to prepare for tutorials?

>> PROFESSOR JAMES KWAN: For engineering tutorials, typically there is a list of coursework that is provided for a given lecture on that topic. That tutorial sheet is then disseminated to all of the tutors and we look through it. The students have about a week or so, sometimes more, to go over and solve the problems prior to the actual tutorial, which is then organised between the specific students and the tutor who's running that tutorial sheet. Then we go over that tutorial sheet, so it's primarily set by the lecturer of that course.

[Question displayed on screen:]

How are tutorials structured?

>> PROFESSOR JAMES KWAN: In engineering the tutorials are structured somewhat differently depending on the individual tutor, but the general structure that we all try to stay close to is that we will go through the problems, maybe not every single one of them, maybe not in any order. For example, what I typically do is, I'll ask the students immediately coming in which problems they had the most trouble with. Oftentimes, I've actually already had a chance to look at their work beforehand, so I already have a sense of what they are going to be having difficulty in, and I kind of prepare a little bit more on those topics. Once we go through those problems, if nobody has any really burning questions that need to be addressed at that moment in time I may go through all of the other problems if time allows, or sometimes if it is of a particularly interesting topic I may bring in extra material that I found in either research papers or a problem

that I've been struggling with at some point in time and give them as an example that's outside of the tutorial sheet, to really spin things around and really test their knowledge base and push them a little bit harder than the tutorial otherwise would have.

[Question displayed on screen:]

How do you explore ideas with students?

>> PROFESSOR JAMES KWAN: For engineering tutorials and for the tutors, we tend to explore ideas in Engineering through a number of different ways. One particular way, the strategy that I employ, is by asking open-ended questions to the students on the topic matter. I give them a chance to discuss either amongst themselves, or with me, and through this discussion I might ask additional questions that might probe a bit deeper into the topic material. Another strategy I will employ is bringing in material from other textbooks that they may not be familiar with or even research papers and really ask them questions on their thoughts on how this might have been done or their opinion on the particular work, and really again there's no right or wrong answer. It's just a matter of getting a sense of how they think about a particular problem and giving them a chance to use that knowledge base and expand on it a little bit.

[Question displayed on screen:]

What do you enjoy about conversations with students?

>> PROFESSOR JAMES KWAN: With my engineering students I enjoy having a number of different types of conversations. Oftentimes, we talk about engineering subjects, but more often than not it tends to be about how they think their progression in the coursework is continuing and how well they're doing relative to perhaps other students, not specific students but just generally within the cohort. Many times, we have discussions on their interests, actually, that again lie somewhat outside of engineering but sometimes it's somewhat linked. Those are the types of conversations I tend to enjoy the most with them, is to really humanise them. They're not just a student but just a person that is sort of going through this journey alongside with me.

[Question displayed on screen:]

How do students inform your own understanding of your subject?

>> PROFESSOR JAMES KWAN: My engineering students, they ask a lot of fundamental questions, and being able to answer those fundamental questions helps inform me of actually my own understanding of the subject matter. It's odd because sometimes their most basic questions are the ones that push me the hardest to actually have a deep understanding, and being able to describe it in many different ways that multiple people

might be able to understand the same topic material and, occasionally, even sort of reflecting back on my understanding of that fundamental creeps its way into my own research and understanding what is the underlying concepts in that.

[Question displayed on screen:]

What qualities do you look for and seek to develop in students?

>> PROFESSOR JAMES KWAN: When we're looking for students to come to our tutorials, there are a number of different qualities that we really are attracted to. One of them is the willingness to learn, which is a surprising one. Of course, everyone has to have a base level of knowledge at a certain level of expertise but really, it's the ones who are able to look beyond that, to really explore new ideas, and take guidance when it's given, and really listen in, and quickly adapt to the local environment. I think those are the qualities for students that we're really looking for.

[Question displayed on screen:]

What is the best thing about teaching at Balliol?

>> PROFESSOR JAMES KWAN: I would say the best thing teaching at Balliol for me is the experience of interacting with so many different students from so many different backgrounds. We bring in a lot of students from different places, from Asia, from Europe and even from across the UK. For me, the chance to see how all of their individual experiences and their backgrounds seem to have, or play, a role in their journey here really excites me and is a chance for me to even see what life is like beyond the places that I've been to.

[Final page:]

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