

Frequently Asked Questions

PHYSICS

Question: What are some of the key topics I would cover?

Answer: In the first year, particle physics, quantum phenomena, waves, mechanics, materials and electricity. In the second year, further mechanics, thermal physics, gravitational and electric fields, capacitors, magnetic fields, nuclear physics and astrophysics

Question: Is there any choice in the topics I can learn?

Answer: Yes, for the very final topic of the course you can choose what to study. The choices are astrophysics, medical physics, engineering and electronics. For the last 8 years all students have requested astrophysics. We only have time to teach one in class, so if a student wished to pick a different option they will have to learn it outside lesson time, but they will be supported in this.

Question: How many other subjects can I choose alongside this one?

Answer: Most students will take 2 other subjects but students with a high average GCSE score will be able to take 3 if they choose to

Question: Are there any subjects that you recommend students take alongside physics?

Answer: Yes, it is strongly recommended that you take A-level maths. The two subjects support each other very well and there is overlap in some topics that are taught. Also if you want to go into an engineering career or one as a physicist then most universities require A-level maths

Question: Is it possible to do physics without doing maths A-level?

Answer: Yes, for the majority of the course we rely on you having a very strong ability in higher GCSE maths. In the second year there is some A-level maths that we start to use, but for students who don't do maths we will teach the required maths separately.

Question: What is the learning style like within this subject?

Answer: Recently we have been trialling flipped learning. Students learn the basic content at home via our new online learning platform called CENTURY. CENTURY is an advanced learning platform which is powered by artificial intelligence which we are developing the first A level physics course for. The systems can make personalised recommendations to the student based on their

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understanding. As teachers we get a much clearer insight into where students struggle. By having most of the learning online it frees up lesson time for more targeted lesson on the areas where students need more support. It also allows more class time for practicals and demonstrations.

Question: How will I be assessed?

Answer: You will complete a 2hr assessment every 2 months. 4 in the first year and 4 in the second year. At the end of the first year you will complete a transfer exam, you will need to pass this to transfer onto the second year of the course. At the end of the 2 years you will sit your external exams which consist of three 2hr papers. You will also complete a series of required practicals, you teacher will assess whether you have proven yourself to be a competent practical scientist.

Question: What support can I access if I am struggling?

Answer: Teachers are available for 1 to 1 support, both electronically on Teams and in person between classes. Students are placed into study groups of 3-4 students and are encouraged to support each other. Mentors can also be allocated for students who need additional support.

Question: Are there any subject specific entry requirements?

Answer: Yes, please refer to the prospectus [here](#) for general and subject specific entry requirements

Question: Are there normally any trips that I can go on?

Answer: In the past we have run a number of small trips, for example we were invited to visit Surrey Satellite Technologies by 2 former Collyer's students who now work there building satellites. We have also visited the Mullard Space Science laboratory and the UCL physics department.

Question: What do students who have studied this area normally do after Collyer's?

Answer: A large number of students go into engineering and architecture careers, including aerospace, mechanical and civil engineering. We have also had some students go work for the ministry of defence, some go to complete PhD's, some to do apprenticeships at Dyson and BAE system and many more!