



Course Outline

OVERVIEW

This STEM club has been carefully designed to enhance your knowledge of science beyond the usual school syllabus. Every Sunday, we will discuss exciting science topics, ranging from Biology to Engineering and Particle Physics. There will also be workshops to develop skills such as scientific writing, data analysis, and interview skills so that when the time comes for you to apply to university, you can really stand out from the others!

This club is definitely for every STEM specialism, as there will be a comprehensive mix of topics whilst also demonstrating the interdisciplinary nature of science.



AUTUMN TERM DATES

- Sunday 24th September
- Sunday 1st October
- Sunday 8th October
- Sunday 15th October
- Sunday 22nd October
- Sunday 29th October

Half Term

- Sunday 12th November
- Sunday 19th November
- Sunday 26th November
- Sunday 3rd December
- Sunday 10th December
- Sunday 17th December

TIMINGS

- 11am-12pm UK time

MEET THE HOST: GREGORY STRANGWARD-PRYCE (MENG)

Greg is an approachable and enthusiastic tutor looking to help ambitious students achieve their goals and expand their science knowledge. He studied Materials Science Engineering at Corpus Christi College, Oxford University, the Massachusetts Institute of Technology, and is now pursuing a PhD at Pembroke College, Cambridge University. He has extensive teaching experience as a tutor in Maths, Physics, Chemistry, Computer Science, and Oxbridge admissions. Greg specialises in tailoring his teaching style in order to explain complex scientific concepts in an understandable manner. When not found working or studying, Greg is commonly found out in a rowing boat or playing classical guitar!

FURTHER INFORMATION

- Group feedback provided in written reports after each session
- Students should let us know with 24hr notice if they cannot make a week's session so we know student numbers



STEM CLUB

Session Plans: 1



24/09/03; NUCLEAR FUSION

Nuclear Fusion - The solution to the climate crisis? Or is it just too difficult? Nuclear fusion has been a keen research area for multiple science disciplines for over 60 years. Recently, nuclear fusion reactors have shown very promising advancements... However, there are still many problems to be solved. So the question is, is it too difficult?



01/10/23 - ELECTRIC FLIGHT - WHY IS IT NOT ALREADY HERE?

Electric cars, bikes, scooters, and skateboards are now extremely common in everyday life. So why not electric commercial planes? In this session we will discuss the scientific problems and solutions to electric flight, and what the future of the industry might be.



08/10/23 - SCIENTIFIC RESEARCH AND WRITING WORKSHOP

Having incredible scientific ideas is one thing, but if you do not know how to effectively investigate and communicate your ideas then no-one will know about it! In this workshop we will discuss how scientific research occurs in the real world, data analysis techniques, and how to write scientific reports.



15/10/23 - STEM INTERVIEW SKILLS

So it is in the future and you have just found the perfect degree or job in STEM! However, they ask you for an interview... DO NOT PANIC! In this workshop, we will go through some practice STEM interview questions from a range of different disciplines. We will also discuss general interview technique, and how you can make yourself stand out from the others.



22/10/23 - THE SCIENCE OF HIP REPLACEMENTS

Hip replacements have been performed since the 1960's. Today, over 109- thousand hip replacements are performed in England and Wales per year alone. The question is, what scientific considerations have to be taken into account for hip replacements to be a success?



29/10/23 - ARTIFICIAL INTELLIGENCE AND ITS PLACE IN OUR WORLD

AI has been an ever more up and coming topic in the news over the past few years. With advancements such as ChatGPT, it begs the question, where will AI have a place in our world in the future? In this session, we will discuss current and future applications of AI in various industries such as drug discovery, Medicine, and Engineering.

STEM CLUB

Session Plans: 2



11/11/23 - STUDY TIPS AND TRICKS

How to get the best marks possible...School can be hard.. especially around the exam period. But **DO NOT PANIC!!** This session will be based around how to study effectively for STEM exams, and keep a level head during exam season.



19/11/23 - RADIATION, WHAT IS IT USED FOR?

Radiation... a mysterious thing that seems to be used throughout many industries. But what is it? Why and how is it used? Is it dangerous? This session will aim to answer all of these questions!



26/11/23 - THE CLIMATE CRISIS. WHAT ARE WE DOING AS A PLANET TO COMBAT IT?

A topic that seems to have been in the news for far too long to not be solved by now.. so why hasn't it? What're we doing to solve it currently? These are the big questions that we need to explore!



3/12/23 - MULTI HAZARD RISK

Natural disasters are unfortunately something that occur in our world. The damage from these events can be catastrophic. The question is, how do we evaluate the risk of natural disasters in order to reduce their effect? Is it more complicated than we think?



10/12/23 - HOW DOES GLOBAL CONFLICT INFLUENCE THE ADVANCEMENT OF TECHNOLOGY?

During times of global conflict such as WW1 and WW2, there were many incredible scientific advancements made. But why did this happen? What effect did it have? This session will try and answer these questions by taking a look at the history of STEM's role during past global conflicts.



17/12/23 - PRESENTATION SKILLS. HOW TO CONVEY AND PRESENT YOUR IDEAS AND MESSAGES

A successful STEM career is based not only around how well you can solve problems and work with others, but also how well you can explain your ideas. This is a skill that does take time and practice. So today's session aims to help you develop this further, explore different ways to improve, and what to avoid!