Oxford Scholastica ACADEMY

EXPERIENCE ENGINEERING ACADEMY

READING LIST

Oxford Scholastica ACADEMY

WELCOME

to the Oxford Scholastica

Experience Engineering Academy!

We're all looking forward to meeting you and delving into the world of engineering together!

Preparing for your classes

Many of our students ask us how they can make the most out of their courses by doing some pre-course preparation, so we've given you some ideas here. Don't worry though – we don't expect you to do all this! We know how busy you are, and the preparation is optional. But if you'd like to make a head start, here are our suggestions...

Activities to do

Pick an engineering project that you think is particularly interesting and do some reading on it. It could be a big project, a small one or even one that failed! In our first class, we'll be discussing these projects, so if you feel up to it, please prepare a short presentation about it (about 5 minutes) to deliver in class.

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RESOURCES TO EXPLORE

If you would like to get to grips with some of the topics we will be covering during the Academy, the following links will be of interest.

1. Animagraffs.com is a fantastic website that is full of animated explanations of everyday engineering. We'd suggest having a look at the car engine and jet engine
https://animagraffs.com/

2. If you want to watch something instead of reading, check out Richard Hammond's Engineering Connections. This programme is an engaging look at challenges that engineers have overcome in order to complete some of the most ambitious projects in modern engineering
https://www.youtube.com/watch?v=JdOXYDZO2so

3. Think there's no point reinventing the wheel? This article is about a recent development in wheels. Spend some time thinking about the benefits and drawbacks of these designs compared to spoked wheels and solid wheels.
https://interestingengineering.com/innovation/7-wheel-innovations-that-literally-reinvent-the-wheel

4. For a very detailed and amazing guide to aero/astronautics check out NASA's Glenn Research Centre archives.
https://www.grc.nasa.gov/WWW/K-12/airplane/index.html

5. Engineering requires using a lot of mathematics, and during the course we will be using simple calculus (differential equations and integrals) to describe what is going on.
If you haven't come across calculus in your studies, don't worry! One of the classes you will take will be on the Maths of Engineering, and we won't be doing anything too long-winded anyway. If you would like to do some preparation beforehand, then a very well explained guide (albeit with silly examples) can be found on Maths is Fun.
https://www.mathsisfun.com/calculus/introduction.html

6. If you'd like to try your hand at some technical drawings, check out 'UCL Drawing Gym'. There's a lot of information on it but we would recommend you have a look at Film 1, Film 2 and Film 4.
https://www.ucl.ac.uk/drawing-gym/

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RESOURCES TO EXPLORE

Book to Read

If you can, buy a copy of ***Engineering: A Beginner's Guide*** **by Natasha McCarthy.**

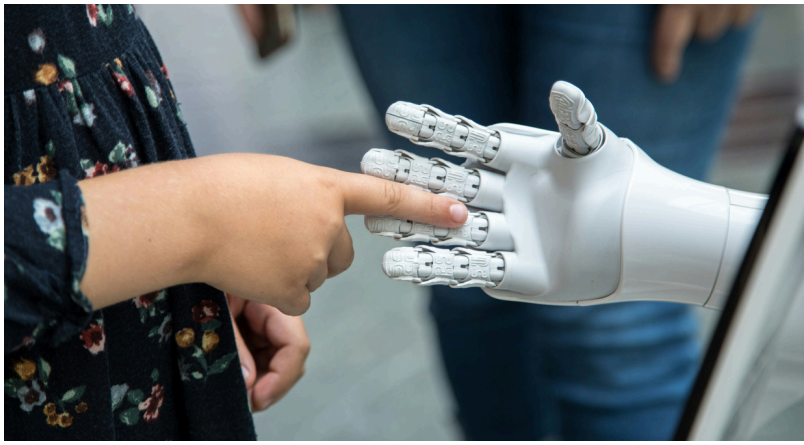
This is an interesting read which explores the origins of engineering and its place in our society.

Of particular interest is Chapter 3 which should introduce the engineering mind-set that you will be adopting on the course.

https://www.amazon.co.uk/Engineering-Beginners-Guide-Guides/dp/1851686622

Try it out!

Engineering is about finding solutions. Pick a problem or inconvenience in your life and come up with an engineering solution that would reduce the problem. Think about the practical aspects of implementing this solution. We'll then look at this during the summer school.



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If you'd like any more resources, please feel free to ask us!

To explore a full course outline of what you will be studying, please see here.
https://www.oxfordscholastica.com/oxford-summer-courses/engineering-summer-school/experience/#outline

We hope you're as excited as we are to start the course and join us in Oxford!