

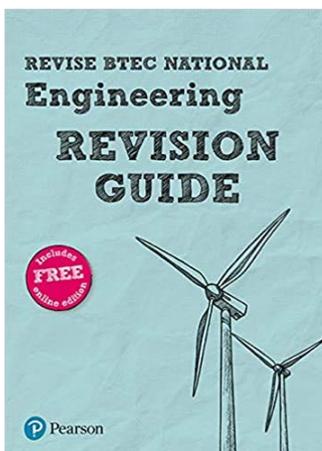
Engineering

Progression to BTEC Engineering at Prior Pursglove College

Advice for new Year 1 Students

The BTEC Level 3 Engineering is the closest course available in England to the now cancelled A Level Engineering. It is very similar in both content and level and provides a solid base to progress to degree level engineering apprenticeships or university.

Preparatory Work



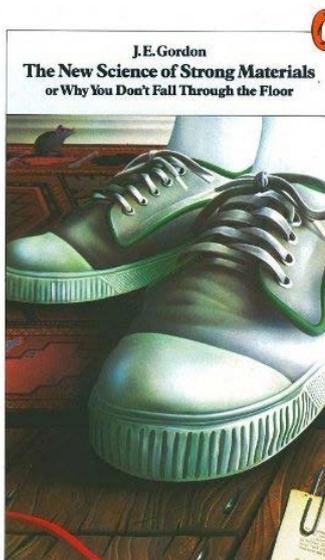
The first unit covers *mathematical and physics principles of engineering*.

The book *BTEC National Engineering Revision Guide*

(Amazon £10.58) is used as a textbook to support lessons.

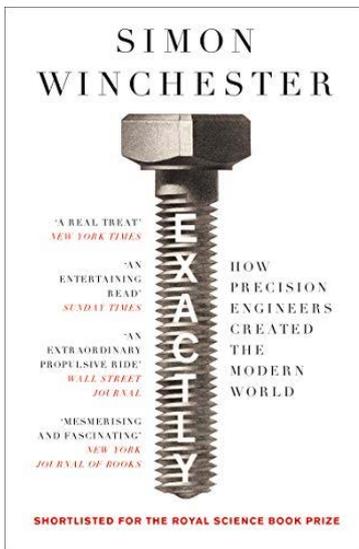
Working through the first 20 pages will set you up well for the first term. If you have any problems then email Dr Ian Robinson (i.robinson@pursglove.ac.uk) for help.

Summer background Reading



The New Science of Strong Materials: Or Why You Don't Fall Through the Floor
by J E Gordon (Amazon)

For an excellent general read there are few better books than this classic



Exactly: How Precision Engineers Created the Modern World

Simon Winchester seeks to answer these questions through stories of precision's pioneers. Exactly takes us back to the origins of the Industrial Age, to Britain where he introduces the scientific minds that helped usher in modern production: John 'Iron-Mad' Wilkinson, Henry Maudslay, Joseph Bramah, Jesse Ramsden, and Joseph Whitworth. Thomas Jefferson exported their discoveries to the United States as manufacturing developed in the early twentieth century, with Britain's Henry Royce developing the Rolls Royce and Henry Ford mass producing cars, Hattori's Seiko and Leica lenses, to today's cutting-edge developments from Europe, Asia and North America.



Stuff Matters: The Strange Stories of the Marvellous Materials that Shape Our Man-made World

From the everyday objects in our homes to the most extraordinary new materials that will shape our future, Stuff Matters reveals the miracles of craft, design, engineering and ingenuity that surround us every day.

From the teacup to the jet engine, the silicon chip to the paper clip, from the ancient technologies of fabrics and ceramic to today's self-healing metals and bionic implants, this is a book to inspire amazement and delight at mankind's material creativity.

'A certain sort of madness may be necessary to pull off what he has attempted here, which is a wholesale animation of the inanimate: Miodownik achieves precisely what he sets out to'

Stuff Matters Mark Miodownik

Online Videos

A search on YouTube for **theengineerguy** will get you his superb general engineering videos. Particularly the ones listed below which are worth watching a few times:-

[The Ingenious Design of the Aluminum Beverage Can](#)

<https://www.youtube.com/watch?v=hUhis2FBuw>

[Black box: Inside a flight data recorder](#)

<https://www.youtube.com/watch?v=xlY5W7be5jU>

[How smoke detectors work](#)

<https://www.youtube.com/watch?v=oFUUQcpGR3k>

[NERF Blaster: Air Restriction Mechanism](#)

<https://www.youtube.com/watch?v=qCxco6227xo>

[Plastic Injection Molding](#)

<https://www.youtube.com/watch?v=RMjtmsr3CqA>

Apollo: The Alignment Optical Telescope

<https://www.youtube.com/watch?v=hVCNS2jQQ6g>

Careers In Engineering

<https://www.theengineer.co.uk/careers-engineering-first-steps/>

<https://www.tomorrowengineers.org.uk/students/career-finder/>