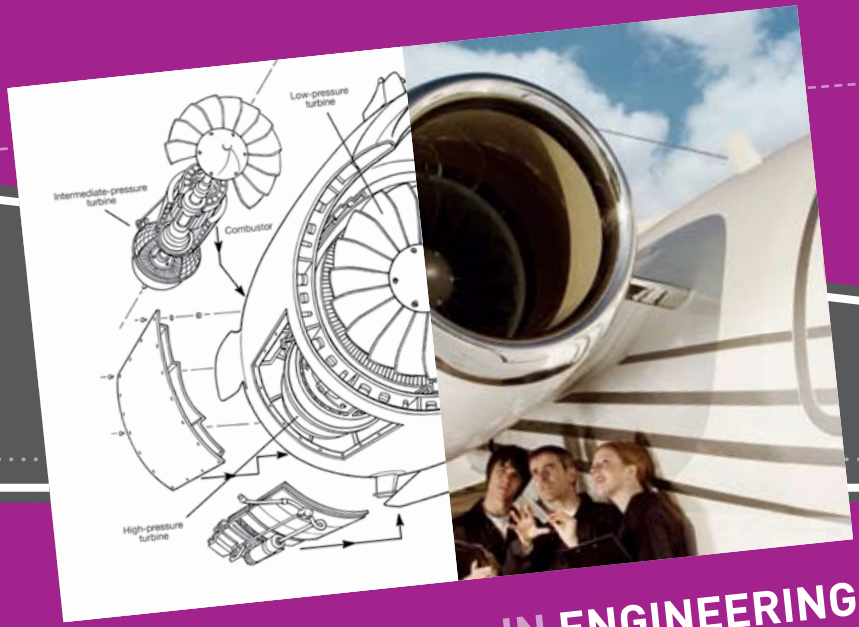
The Diploma

Bringing learning to life



IN ENGINEERING

"Rolls-Royce is giving the Diploma in Engineering its full support. It is a great opportunity for young people to discover what engineering is all about so they can make the right decisions for their future. Then, those who do go on to select engineering as a career will be fully engaged from the start and ready to move on to the next stage of their development, whether that be further study via higher education or through an Apprenticeship, or a job within the engineering industry."

Margaret Gildea,
Executive Vice President of
Human Resources – Operations
and UK Employment Skills Policy,
Rolls-Royce

Play a crucial role in everyone's future

Engineering is all around us. It plays an important part in what we do every day and has an impact on everyone's life. Engineering creates the infrastructure in which we live, work and spend our leisure time.

So, not surprisingly, the engineering sector is huge. Over 1.6 million people already work in engineering-related jobs in sectors like health, entertainment, farming, architecture, mechanics, electronics, telecommunication, biomedicine, aerospace, transport, design, oil, gas, chemical and nuclear energy and utilities, engineering manufacture and building services.

But there is always room for more. If you enjoy challenges and problem-solving, are creative, innovative, have flexible skills and are interested in new technology, your career prospects in engineering are excellent.

BUILD ESSENTIAL SKILLS AND EXPERIENCE

The Diploma in Engineering opens up the ideas and concepts behind engineering, and how they impact the modern world. You'll be introduced to key engineering principles such as design, materials, electronic systems, maintenance and manufacturing.

You'll also get lots of practical experience and study what makes innovations succeed, how new materials contribute to design and how to develop and launch new ideas.

What will I learn?

The Diploma in Engineering focuses on three main themes:

The engineered world: Looks at the importance of engineering in the modern world and the impact engineering has on the way we live our lives.

Discovering engineering technology: Introduces basic engineering principles such as design, materials, electronics systems, maintenance and manufacturing.

Engineering the future: Looks at what makes innovations succeed, how new materials contribute to design and how to develop and launch new ideas.

HOW IS THE DIPLOMA MADE UP?

Principal learning (subject learning you have to do)

At the heart of the Diploma are your core engineering subjects. These will teach you the main things you need to know about the sector. You'll learn about the issues that are affecting the industry today, how it works and what skills you need to have to work within it.

ACTIVITIES YOU MIGHT DO IN YOUR PRINCIPAL LEARNING

These are just some examples of the kind of learning you'll be doing.

FOUNDATION DIPLOMA	HIGHER DIPLOMA	ADVANCED DIPLOMA
The engineered world You'll learn how engineering has shaped the world in which we live. You could, for example, look at a microlight aircraft. You could take apart its engineered parts and put them back together again using a manual. **Discovering engineering technology** Amongst many other topics, you'll learn how to produce simple engineering drawings and diagrams. You could, for example, produce sketches, plan and produce a multi-function tool for a mountain bike. **Engineering the future** As well as other subjects, you'll learn about the impact of recycling. You could, for example, look at how products are recycled or safely disposed of at the end of their useful life.	**The engineered world** You'll learn about the different engineering sectors and engineering's diverse role. You could, for example, research and examine the use of microprocessor technology in CGI movies, theme park rides or a music sound studio. **Discovering engineering technology** In addition to a range of other subjects, you'll learn how to use computer software packages and systems to design and manufacture engineering components. You could, for example, set up and use computer systems to design a one-off artificial limb for an Olympic athlete. **Engineering the future** You'll learn about the relationship between innovative engineering design and business success. You could, for example, find out how to develop innovative and creative ideas and get all-important finance for a project.	**The engineered world** You'll learn how engineering businesses operate, their processes and the internal and external factors that affect the business. You could, for example, learn how project management, research, manufacturing, design, marketing and other parts of an engineering business come together to make it successful. **Discovering engineering technology** As well as other varied activities, you'll develop and apply the use of computer-aided design (CAD) in a range of engineering contexts. You could, for example, produce a 3D CAD model and presentation drawing of a cable-stay bridge. **Engineering the future** You'll learn how to apply mathematical and scientific principles in engineering analysis, design and problem solving. You could, for example, explore how mathematics is used in engineering systems in smart homes which make living alone safer and easier for the elderly or people with disabilities.

ADDITIONAL AND SPECIALIST LEARNING (CHOICES YOU CAN MAKE)

At each level, you can develop your particular engineering interests further by taking specialist courses relating to your chosen subject and career ambitions. Depending on the options available at your local school or college, you could, for example, learn about robotics, medical engineering, aerospace, car and motorcycle maintenance, electronics or chemical manufacturing.

If you want to carry on studying engineering at university, it would be a good idea to take the maths for engineers option designed specifically for Diploma students as part of the Advanced Diploma in Engineering.

You can also broaden your course by taking an additional subject that reflects your other interests and career ambitions – like a language, a science, or a creative subject like music.

FUNCTIONAL SKILLS IN ENGLISH, MATHS AND ICT

Like all Diploma students, you'll develop a good standard of English, maths and ICT. These subjects are essential to succeed in any business or learning environment, whether you decide to continue in the engineering sector or not.

PERSONAL, LEARNING AND THINKING SKILLS

All Diploma students will develop personal, learning and thinking skills, such as team-working, creative thinking and self-management. These are vital skills in both life and work, and will be useful to you in the future, no matter which path you take.

WORK EXPERIENCE

Your Diploma will give you the opportunity to do at least 10 days' work experience. This is a great way to use the skills you have learnt in the classroom, and experience what work is like from the inside.

STUDENT PROJECTS

During your Diploma, you'll complete a student project to demonstrate the skills and knowledge that you have learnt. You might decide to design a car powered by electricity or solar energy. Or you could design a water pump for use in a developing country.

What a Diploma will lead to

A Diploma in Engineering will give you the skills you need for either university or work, and is a first step towards a career in the sector.

It could lead you to a university degree in aeronautical engineering, automotive engineering, building services engineering, manufacturing engineering, electrical and electronic engineering, mechanical engineering or biomedical materials science.

However, the Diploma in Engineering doesn't mean you have to opt for a career in this sector. Because a Diploma teaches a mix of subjects, it will give you the skills that will be welcomed by colleges, universities and employers, and is an excellent starting point for other careers or study.

Case study

THE YEAR IS 2010. THIS COULD BE THE EXPERIENCE OF ONE DIPLOMA STUDENT.

**MEET ALISON,
A DIPLOMA IN ENGINEERING STUDENT**

Alison, 16, from Ipswich is studying for an Advanced Diploma in Engineering.

'I'm always sketching designs and models, so my teacher suggested that I study for an Advanced Diploma in Engineering.'

WHAT I WILL LEARN...

We study nine mandatory units on the Diploma, covering all the things I need to know about engineering, from materials to design and manufacturing. We'll also be looking at computer-aided design, equipment and systems. For the additional and specialist learning part of my course, I'm taking an A level in German. The language qualification will be really useful if I end up working abroad, which is something I'm considering.

I'M LOOKING FORWARD TO...

My extended project is going to be a lot of fun. I'm working with the other students in my class to see if we can have a wind turbine in the college grounds. We'll get to talk with environmental scientists and people who work in renewable energy to see whether it's possible. I'm also doing my work experience with an electronics consultancy. So by the end of my Diploma course I will have experienced lots of different parts of the industry.

THE FUTURE...

My plan is to have a career in engineering, but I'd like to work overseas too. I might apply to do an Honours degree course, but combine it with another subject. So perhaps Mechanical Engineering and German or Mechanical Engineering with a year in North America.

This case study is an illustration of how and why a student might decide to do a Diploma. It does not refer to a real individual.

"The University of Warwick welcomes the Diploma for its potential to extend opportunity to more young people, enabling them to take advantage of a high-quality university education at Warwick and elsewhere."

Professor Nigel Thrift,
Vice-Chancellor,
Warwick University

Want to find out more?

To find out more about the Diploma in Engineering, speak to your teacher or careers adviser. You can also find more information about Diplomas on these websites:

www.direct.gov.uk/diplomas
www.connexions-direct.com
www.engineeringdiploma.com

DOWNLOADING THIS LEAFLET

If you'd like to download this leaflet, go to http://yp.direct.gov.uk/diplomas/explore_more/media_centre

FINDING A COURSE IN YOUR AREA

If you'd like to find out where you can study for this Diploma in your area, go to http://yp.direct.gov.uk/diplomas/where_to_study

or have a look at the prospectus showing all courses in your area: follow the link on www.dcsf.gov.uk/14-19/

You can download this leaflet or order copies online at **www.teachernet.gov.uk/publications** Search using reference DCSF-00491-2008.

You can also order more copies by calling 0845 60 222 60;
textphone 0845 60 555 60. Please quote reference 00491-2008LEF-EN.

For further information, see **www.teachernet.gov.uk/diplomas**

For more information about the new 14–19 curriculum,
visit **www.dcsf.gov.uk/14-19**

Information about the structure of Diplomas and resources to support their delivery by schools and colleges are available from the Qualifications and Curriculum Authority at **www.qca.org.uk/diploma**

department for
children, schools and families