

Recruiting Diploma in Engineering graduates

A guide for employers

Version 1.1

The
Diploma
IN ENGINEERING

Contents

What is the Diploma in Engineering?	3
Diploma components	3
How is the Diploma in Engineering different to other qualifications?	3
What will a Diploma graduate have that makes them stand out?	4
Interviewing Diploma in Engineering Students	5
Line of Learning	5
Personal Learning and Thinking Skills	5
Project	5
Work Experience	5
Additional and Specialist Learning	5
APPENDIX 1	6
Diploma in Engineering Equivalencies	6
APPENDIX 2	7
Diplomas in the Qualifications and Credit Framework in England	7
APPENDIX 3	8
Diploma in Engineering Unit Titles	8
APPENDIX 4	9
Personal Learning and Thinking Skills	9
APPENDIX 5	10
Diploma Quotes from Employers	10
Quotes from Diploma Employer Champions	10

What is the Diploma in Engineering?

The Diploma is a new applied qualification developed with employers to provide learners with subject specific skills and knowledge alongside employability skills and a self managed project.

The Diploma is available at 3 levels:

Foundation: equivalent to 5 GCSE grades at D-G

Higher: equivalent to 7 GCSE grades at A*-C

Advanced: equivalent to 3.5 A levels

There is also a Progression Diploma available at Advanced Level, which comprises the Principal Learning, Functional Skills and extended project, and is equivalent to 2.5 A levels.

Pre-16, the Foundation and Higher diplomas are studied alongside the compulsory elements of the curriculum (eg Science, citizenship, and physical education).

Diploma components

Principal Learning which is subject specific (referred to as lines of learning) and represents half the Diploma study time. See Appendix 3 for the units which Diploma in Engineering students will study.

Generic Learning which covers the personal learning and thinking skills (PLTS – see Appendix 4 for the elements of PLTS covered in the Diploma), the functional skills (guaranteeing literacy, numeracy and ICT skills) and a project.

Additional and Specialist Learning (ASL) which allows students to broaden their learning experience, or focus on a specific area of their chosen subject. For Engineering students, additional and specialist learning can include specially reconfigured BTEC units, newly created qualifications (eg the ABC qualifications in Building Services Engineering), the new Maths for Engineering qualification from OCR, or GCSEs and A levels.

How is the Diploma in Engineering different to other qualifications?

The emphasis of the Diploma in Engineering is on applying engineering concepts to real life examples, and at least 50% of the learning must be applied.

A wide range of study and life skills (identified as essential by employers and admissions tutors) are developed by students and assessed by tutors.

A key factor of the Diploma in Engineering is transferability. Students are not forced to make life choices too early, the different qualifications have been written to ensure students can transfer between diplomas and other qualifications and maintain choice of progression. The employability skills developed on the Diploma in Engineering could be used for all kinds of careers and further learning and do not restrict an individual to a career in engineering. The ASL aspect of the Diploma allows for real personalised study for students, facilitating choice and progression.

What will a Diploma graduate have that makes them stand out?

Students...

- have the opportunity to make an informed choice on career progression, having experienced elements of it, thus aiding retention and reducing the likelihood of poor choices;
- understand the skills they have developed and are encouraged to reflect on them;
- complete a rigorous programme of study that meets strict criteria identified as essential by employers;
- manage areas of their own learning, primarily a project they agree with their tutor;
- experience real work through work related learning supported by employers;
- undertake work experience linked to their studies; and
- complete the Functional Skills assessments, these are contextualised assessments for Maths, English and ICT demonstrating the skills can be used in real situations.

Interviewing Diploma in Engineering Students

Whilst the Diploma Transcript (the certificate presented to students completing the diploma) summarises grades and completion of the various elements of the Diploma, it cannot reflect the full range of the students experience. To support employers in appraising Diploma graduates, this document suggests questions that recruiters could use to highlight the unique experience of Diploma Students.

Line of Learning

Why did you choose to study the Diploma in Engineering?

Why is engineering important to the UK?

What sort of opportunities are there for students studying engineering?

Personal Learning and Thinking Skills

(see appendix 4 for PLTS content)

Tell me about when you worked as part of a team and the role that you played in that team?

Which parts of the course did you feel you had to manage yourself? How well do you think you did this?

During your studies, when did you have to think creatively?

Do you think you are different now to when you started studying the course? If so how are you different and why?

Give me an example of when you worked independently.

Give me an example of when you had to choose the direction you wanted your studies to go in.

Tell me about your diploma group and how they worked together?

Project

What is the title of your project?

What was it about and why you chose to do it?

What would you do differently if you could do this project again?

Work Experience

Where did you go for your work experience?

Why did you choose that company?

What was the best thing about your time there?

Tell me about any things you learned in the course that you saw being used during your work experience?

(Employers who take Diploma students on work experience will be encouraged to provide a short commentary on the experience, which recruiters may ask about.)

Additional and Specialist Learning

Which qualifications did you do for ASL and why?

(How) do you think they added to your understanding of engineering?

APPENDIX 1

Diploma in Engineering Equivalencies

Other qualifications	...are equivalent to the Diploma in Engineering at...	Diploma in Engineering grades achievable	Diploma students also have...	Qualifications Diploma students may have studied AS PART of the Diploma in Engineering	Qualifications Diploma students may have studied OUTSIDE the Diploma in Engineering
5 GCSE grades D-G	Foundation Level	A*, A, B, ungraded	Level 1 Functional Skills in numeracy, literacy, IT A project based on the line of learning	<ul style="list-style-type: none"> GCSEs BTEC qualifications City & Guilds qualifications OCR Nationals Vocationally Related Qualifications (VRQs) 	GCSEs NVQ
7 GCSE grades A*-C	Higher Level	A*, A, B, C, ungraded	Level 2 Functional Skills in numeracy, literacy, IT A project based on the line of learning	<ul style="list-style-type: none"> GCSEs BTEC qualifications City & Guilds qualifications OCR Nationals VRQs 	GCSEs NVQ
3.5 A levels	Advanced Level	A*, B, C, D, E, ungraded	Level 2 Functional Skills in numeracy, literacy, IT An extended project based on a particular area of engineering	<ul style="list-style-type: none"> A levels BTEC qualifications City & Guilds qualifications OCR Nationals VRQs Level 4 courses 	A levels
2.5 A levels	Progression Diploma	A*, B, C, D, E, ungraded	Level 2 Functional Skills in English, ICT and mathematics		
	Extended Advanced Diploma	Coming 2011			

APPENDIX 2

Diplomas in the Qualifications and Credit Framework in England

Qualification Levels England	Vocational Qualifications	Academic/Applied Qualifications
Levels 8-7	Graduate apprenticeship	Doctorate Masters degree Post-graduate certificates and diplomas
Level 6	Graduate apprenticeship	Honours degree Management certificates and diplomas
Levels 5-4	NVQ 4 - 5 Higher apprenticeship	Foundation degree (Fd) HNC/HND Management certificates and diplomas
Level 3	NVQ 3 Advanced apprenticeship	Progression/Advanced Diploma National certificate or diploma A levels
Level 2	NVQ 2 Apprenticeship	Higher Diploma GCSEs A*-C
Level 1	NVQ 1 Apprenticeship	Foundation Diploma GCSEs D-G

APPENDIX 3

Diploma in Engineering Unit Titles

(These unit titles are from the AQA awarding body version of the Diploma in Engineering, and may vary slightly with other awarding bodies)

Foundation Unit 1: Introducing the world of engineering
Foundation Unit 2: Practical engineering and communication skills
Foundation Unit 3: Using Computer Aided Engineering
Foundation Unit 4: Routine maintenance operations
Foundation Unit 5: Introduction to engineering materials
Foundation Unit 6: Introduction to electronics
Foundation Unit 7: Engineering the future

Higher Unit 1: The engineered world
Higher Unit 2: Engineering design
Higher Unit 3: Engineering applications of computers
Higher Unit 4: Producing engineering solutions
Higher Unit 5: Construct electronic and electrical systems
Higher Unit 6: Manufacturing engineering
Higher Unit 7: Maintenance
Higher Unit 8: Innovation, enterprise and technological advance

Advanced Unit 1: Engineering business and the environment
Advanced Unit 2: Applications of Computer Aided Designing
Advanced Unit 3: Selection and application of engineering materials
Advanced Unit 4: Instrumentation and control engineering
Advanced Unit 5: Maintaining engineering systems and products
Advanced Unit 6: Production and manufacturing
Advanced Unit 7: Innovative design and enterprise
Advanced Unit 8: Mathematical techniques and applications for engineers
Advanced Unit 9: Scientific principles and applications for engineers

APPENDIX 4

Personal Learning and Thinking Skills

Personal Learning and Thinking Skills elements

1. Independent Enquirer

- 1.1. identify questions to answer and problems to resolve
- 1.2. plan and carry out research, appreciating the consequences of decisions
- 1.3. explore issues, events or problems from different perspectives
- 1.4. analyse and evaluate information, judging its relevance and value
- 1.5. consider the influence of circumstances, beliefs and feelings on events
- 1.6. support conclusions, using reasoned arguments and evidence

2. Creative Thinker

- 2.1. generate ideas and explore possibilities
- 2.2. ask questions to extend your thinking
- 2.3. connect your own and others' ideas and experiences
- 2.4. question your own and others' assumptions
- 2.5. try out alternatives or new solutions and follow ideas
- 2.6. adapt ideas as circumstances change

3. Reflective Learner

- 3.1. assess yourself and others, identifying opportunities and achievements
- 3.2. set goals with success criteria for their development and work
- 3.3. review progress, acting on the outcomes
- 3.4. invite feedback and deal positively with praise, setbacks and criticism
- 3.5. evaluate experiences and learning to inform future progress
- 3.6. communicate your learning in relevant ways for different audiences

4. Team Worker

- 4.1. collaborate with others to work towards common goals
- 4.2. reach agreements, managing discussions to achieve results
- 4.3. adapt behaviour to suit different roles and situations
- 4.4. show fairness and consideration to others
- 4.5. take responsibility, showing confidence in yourself and your contribution
- 4.6. provide constructive support and feedback to others

5. Self Manager

- 5.1. seek out challenges or new responsibilities and show flexibility when priorities
- 5.2. work towards goals, showing initiative, commitment and perseverance
- 5.3. organise time and resources, prioritising actions
- 5.4. anticipate, take and manage risks
- 5.5. deal with competing pressures, including personal and work-related demands
- 5.6. respond positively to change, seeking advice and support when needed

6. Effective Participator

- 6.1. discuss issues of concern, seeking resolution where needed
- 6.2. present a persuasive case for action
- 6.3. propose practical ways forward, breaking these down into manageable steps
- 6.4. identify improvements that would benefit others as well as yourself
- 6.5. try to influence others, negotiating and balancing diverse views to reach workable solutions
- 6.6. act as an advocate for views and beliefs that may differ from your own

APPENDIX 5

Diploma Quotes from Employers

The following quotes have been taken from an interview with Professor Matthew Harrison based on his involvement with the first year of delivery for the Diploma in Engineering.

“The Royal Academy of Engineering, a vocal supporter of the Diploma in Engineering from the beginning, has conducted its own research on how well the qualification has fared in the first few months since its launch. The headline message is ‘so far so good’, but there is no room for complacency.”

“The Diploma in Engineering is an authentic engineering course.”

“Learning extends well beyond the grounding in basic engineering defined by the Principal Learning requirements. There is an individual project, periods of work-based learning and real depth of investigations through optional Additional and Specialist Learning. Because of this authenticity and rigour (the Diploma in Engineering is not an easy course), university admissions officers have declared their intention to accept the Level 3 diploma for direct admission to engineering degree courses..... This is very welcome, but it is worth stating that the diploma is as much about preparing young people for work (perhaps through the apprenticeship route) as preparing them for higher education.”

The article is in the Summer 2009 edition of the E&Te magazine pg 4. The magazine can be downloaded free from the IET web site at:

<http://www.theiet.org/education/supportteachers/ete/>

Quotes from Diploma Employer Champions

"Every employer, whatever the sector, whether a SME or FTSE 100, third sector, national or local government organisation, all of us will benefit from the quality of students who will come out of the Diploma programme."

Sir Alan Jones,
of Toyota.

"We are excited that the new Diploma provides a flexible and balanced curriculum which for the first time will enable students to gain a real understanding of the construction industry. The emphasis on employer involvement in delivering learning and in quality work experience will ensure that students develop skills which are relevant to what employers like Lovell are looking for."

Bruce Boughton,
Lovell Partnerships Ltd

These are just two of many quotes from employers who endorse the diplomas. A pdf of quotes from a wide range of employers can be downloaded at:

<http://www.dcsf.gov.uk/14-19/index.cfm?go=site.home&sid=47&pid=375&lid=348&ctype=Text&ptype=Single>