Level 1 – Sample scheme of work
(7331)

ENGINEERING
Unit 7: Engineering the future

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Sample scheme of work

This is an example of a possible scheme of work. You can use it as it is, adjust it or extract content to create a scheme of work to suit your delivery needs. It can also be adjusted by adding theory workshops to support learners who have/need additional learning time.

This unit is assessed through a centre set and marked assignment, which will be externally moderated. A sample assignment brief and a learner's submission with commentary by the principal moderator are available at www.diplomainfo.org.uk

Total GLH	30
Aim	To introduce learners to new developments in engineering technology. Learners will be able to: • describe new developments in materials and engineering technology • understand the environmental issues that relate to engineering, including recycling and product disposal.
Notes	The scheme of work presented here uses a task-based approach to teach the learning objectives for this unit. This means that several different assessment criteria may be integrated within a single task. Under FS (functional skills): * indicates opportunities for assessment in English of speaking and listening and/or written communication # indicates opportunities for the use of information and communication technology (ICT).

Session number	Topic and learning outcomes	Activities, assignments, assessments, resources	LO and AC	PLTS	FS	GLH	Other comments
1	**Introduction to the unit**	Provide an overview of the learning objectives and the tasks to be carried out for this unit. Present a brief overview of how some historical developments in materials (eg plastics, microprocessors) have drastically changed society. Within this, it should be recognised that engineering and the development of new engineered products may have benefits (eg to our quality of life) and drawbacks (eg environmental issues).			*	1	The film *An Inconvenient Truth*, featuring Al Gore, could be used to set the context for the environmental issues covered in this unit.
2–7	**Innovation and the impact of technology** Aims/learning outcomes: • Be able to describe developments in new materials and technology.	Working in pairs, each pair should be allocated a new material or new technology (see the Principal Learning specification for examples). Using the internet and other resources, learners should identify: • the characteristics of the material or new technology that make it useful • how it is made • what it could be used for • the potential advantages and drawbacks of using it. Each pair should give a PowerPoint-based presentation of their findings to the group.	LO1 AC1a–c	IE CT RL TW SM EP	* #	6	The properties of the materials links to Unit 5: Introduction to engineering materials.

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8–12	**Sustainable energy** Aims/learning outcomes: • Be able to carry out research into the social and environmental impact of different methods of energy generation. • Be able to explain the social and environmental impact of different methods of energy generation.	Begin the topic with an interactive exposition of the global demand for energy. This should include an explanation of the effects of energy generation on the environment. Working in teams of four, each team should be allocated a method of generating electricity. Using the internet and other resources, they should identify: • how the renewable energy resource generates electricity • the relative advantages and drawbacks of that resource. The team should give a PowerPoint-based presentation of their findings to the group.	LO2 AC2a, b, d–f	IE CT RL TW SM EP	* #	5	Environmental considerations could be linked to Unit 1: Introducing the world of engineering.
13–15	**Product disposal and recycling** Aims/learning outcomes: • Be able to explain how engineering products are disposed of at the end of their life and methods of recycling.	Arrange a visit to a local recycling centre. The visit should include: • an exposition on the use of non-sustainable and sustainable resources • an explanation of how different products are disposed of at the end of their life • an explanation of how different materials are recycled.	LO2c	IE CT EP	*	3	Environmental considerations could be linked to Unit 1: Introducing the world of engineering. The materials aspect could be linked to Unit 5: Introduction to engineering materials.

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16–30	**Assessed assignment**	Learners to carry out the example assignment, focusing on the selection of material for body armour and the energy supply for the manufacture of the body armour in a remote location. Learners will need to investigate what the armour could be made from and summarise their findings in a report. As part of a team, learners will then create an information chart identifying the energy sources that could be used during the product's manufacture. Finally, they will need to give a presentation to show how the team investigated the problem.	All	IE CT RL TW SM EP	* #	15	This example assignment, a learner's submission and commentary by the principal moderator can be found at www.diplomainfo.org.uk