

Design and Manufacture: Product Evolution

SCQF: level 7 (8 SCQF credit points)

Unit code: J2BL 77

Unit outline

The general aim of this Unit is for learners to explore the historical factors which have influenced the design, development and manufacture of a commercial product in terms of the influences of technology, materials, trend, and policy, considering how these have directed and influenced its evolution. It is a study over a product's development history and possible future evolution, through the application or influences of new and emerging technologies. Learners will identify and consider the key and critical stages of the product's development and the historical influences on which design decisions have been made. This Unit requires learners to develop a strong skills set for enquiry and use of evidence.

Learners who complete this Unit will be able to:

- 1 Research factors that have influenced the evolution of the design and manufacture of a selected commercial product
- 2 Investigate the impact of new and emerging technologies on the evolution of the design and manufacture of a selected commercial product

This Unit is available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Unit Support Notes*, which provide advice and guidance on delivery, assessment approaches and development of skills for learning, skills for life and skills for work. Exemplification of the standards in this Unit is given in *Unit Assessment Support*.

Recommended entry

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ Higher Design and Manufacture Course or relevant Units

Equality and inclusion

This Unit Specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. For further information, please refer to the *Unit Support Notes*.

Standards

Outcomes and assessment standards

Outcome 1

The learner will:

1 Research factors that have influenced the evolution of the design and manufacture of a selected commercial product by:

- 1.1 Researching the influences of developments in materials, manufacturing and technology
- 1.2 Researching the influences of external factors

Outcome 2

The learner will:

2 Investigate the impact of new and emerging technologies on the evolution of the design and manufacture of a selected commercial product by:

- 2.1 Describing a range of new and emerging design and manufacturing technologies
- 2.2 Explaining the impact of new and emerging design and manufacturing technologies on a selected commercial product

Evidence requirements for the Unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence is required that the learner has met the Outcomes and Assessment Standards.

Outcomes may be met using a variety of methods and techniques — those which best support the context of the activity — and will therefore be a combination of approaches.

Evidence may be presented for individual Outcomes or it may be gathered for the Unit as a whole through combining assessment holistically in one connected activity. If the latter is used it must be clear how the evidence gathered covers each Outcome.

For this Unit, learners will be required to provide evidence of investigation skills in determining the design, development and evolution of a commercial product, together with a critical evaluation of the factors which have influenced the product's design journey.

Exemplification of assessment is provided in *Unit Assessment Support*. Advice and guidance on possible approaches to assessment is provided in the *Unit Support Notes*.

Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Unit. The skills that learners will be expected to improve on and develop through the Unit are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Unit where there are appropriate opportunities.

2 Numeracy

2.2 Money, time and measurement

4 Employability, enterprise and citizenship

4.2 Information and communication technology (ICT)

5 Thinking skills

5.4 Analysing and evaluating

5.5 Creating

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level as the Unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *Unit Support Notes*.

Administrative information

Published: July 2019 (version 3.0)

Superclass: VF

History of changes to National Unit Specification

Version	Description of change	Authorised by	Date
2.0	Both Outcomes and all Assessment Standards amended for clarification.	Qualifications Development Manager	April 2015
3.0	Level changed from AH to SCQF level 7 Unit code updated	Qualifications Manager	July 2019

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Note: readers are advised to check SQA's website: www.sqa.org.uk to ensure they are using the most up-to-date version of the Unit Specification.

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