SCQF level 5
Unit Specification

Practical Electronics: Circuit Simulation

SCQF: level 5 (6 SCQF credit points)

Unit code: J2CN 75

Unit outline

The general aim of this Unit is to develop skills in the use of simulation software in the context of practical electronics. Learners will use software to assist in the design, construction and testing of electronic circuits.

Learners who complete this Unit will be able to:

1 Use software in the design of electronic systems
2 Use software in the construction and testing of electronic systems

This Unit is available as a free-standing Unit. The Unit Specification should be read in conjunction with the Unit Support Notes, which provides 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 the National Assessment Resource

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:

- Practical Electronics: Circuit Simulation (National 4)
- Numeracy (National 4)

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 **Use software in the design of electronic systems by:**

1.1 Simulating a range of electrical concepts
1.2 Simulating electronic systems
1.3 Investigating the behaviour of simulated circuits

Outcome 2
The learner will:

2 Use software in the construction and testing of electronic systems by:

2.1 Creating circuit diagrams
2.2 Converting circuit diagrams to PCB layouts
2.3 Using simulations to assist testing of circuits

In this Unit, typical circuits could involve a power supply, multiple input devices, processing and more than one output device.

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.

For this Unit, learners will be required to demonstrate the ability to use software in the design, construction and testing of electronic circuits. Evidence is most likely to be observational, obtained while the learner is carrying out appropriate practical tasks.

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

Assessment standard thresholds

If a candidate successfully meets the requirements of the specified number of Assessment Standards they will be judged to have passed the Unit overall and no further re-assessment will be required.

The specific requirements for this Unit is as follows:

- 4 out of 6 Assessment Standards must be achieved.

It should be noted that there will still be the requirement for candidates to be given the opportunity to meet all Assessment Standards. The above threshold has been put in place to reduce the volume of re-assessment where that is required.

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.

4 Employability, enterprise and citizenship

4.2 Information and communication technology (ICT)

5 Thinking skills

5.2 Understanding

5.3 Applying

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 of 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 2.0)

Superclass: XL

History of changes to National Unit Specification

Version	Description of change	Authorised by	Date
2.0	Unit code updated	Qualifications Manager	July 2019