



Level 3 Certificate in

ENGINEERING

Robotics and Automation

Co-funded by the
Erasmus+ Programme
of the European Union



Qualification Specification

Overview

This qualification has been developed to provide learners with the understanding and skills involved with robotics and automation within a manufacturing environment.

Typical Job

Manufacturing Engineer.

Qualification code:	603/2296/2
Level:	3
Guided learning hours:	186 Hours
Total qualification time:	205 Hours
Minimum learning age:	16

Issue 1.1

Purpose of qualification

This qualification covers the knowledge, understanding and practical skills involved with robotic and automation engineering within a manufacturing environment.

What does this qualification cover?

This qualification comprises of a series of units which cover the knowledge and skills of robotic and automation engineering including: programmable logic control, maintenance of automation, fault finding and diagnosis, robot processes and functions, automated control systems, machine software design principles, robot programming, simulation engineering, process optimisation. There is an additional unit covering innovation in automation which can be selected as applicable to suit local needs. It has been developed from 'SKILLMAN' units. SKILLMAN is a Sector Skills Alliance for Advanced Manufacturing for the Transport Sector, promoted in partnership with a team of industrial players, including Jaguar Land Rover, FIAT Research Centre and SAS (Scandinavian Airlines Systems) in cooperation with research centres, education and awarding bodies. The Sector Alliance aims at detecting the skills needs and jointly designing educational programmes and qualifications in line with current and emerging technologies and providing solutions to industry led demand for skills and competencies.

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Who is this qualification for?

- Learners who wish to understand robotic and automation engineering.
- Technicians and engineers who already work within the manufacturing industry who wish to enhance or re-confirm their skills and understanding of robotic and automation engineering.

Who supports this qualification?

This qualification is:

- Regulated at Level 3, and is Supported by Jaguar Land Rover.

What could this qualification lead to?

This qualification can enable progression to further study, such as technical qualifications at level 4. It will also enhance the career prospects of learners working within the industry.

Entry requirements

Learners must be at least 16 years old. There are no formal entry requirements for this qualification. However, learners must have the potential to achieve all aspects of the qualification. In particular, learners should be able to demonstrate that they have the minimum levels of literacy and numeracy required to comply with the health and safety aspects of the scheme, the completion of the learning outcomes, and the assessments.

How is the qualification achieved?

This qualification will be achieved when the learner has successfully completed the units which are assessed by centre devised and marked assessments which meet in total the learning outcomes and criteria.

What will be assessed?

The units in this qualification are assessed by centre devised assessment methods. The units contain the learning outcomes and the assessment criteria that the learner is to be assessed against. All learning outcomes within the qualification will be assessed. In order to meet this requirement, it is advised that centres should maintain an assessment and feedback record for each learner. This will detail the evidence evaluated against the learning outcome and the feedback given to the learner. All learner evidence must be available to the EAL External Quality Assurer.

How will it be assessed?

This qualification is assessed either by the assignments provided by EAL or by the centre's own devised assessments created in accordance with EAL processes.

All assessment decisions are subject to internal and external quality assurance.

Structure

This qualification will be obtained by the learner once they have achieved the units below:

Unit	Unit title	GLH	Ofqual Code
ROB3-01	Programmable Logic Controllers	22	H/616/2149
ROB3-02A	Mechanical Maintenance of Automation	20	Y/616/2150
ROB3-02B	Electrical Maintenance of Automation	25	D/616/2151
ROB3-02C	Maintenance Support Activities for Automation	20	H/616/2152
ROB3-03	Fault Finding and Diagnosis for Automation and Robotics	7	K/616/2153
ROB3-04	Robot Processes and Functions	7	M/616/2154
ROB3-05	Automated Control Systems	15	T/616/2155
ROB3-06	Machine Software Design Principles	20	A/616/2156
ROB3-07	Robot Programming	15	F/616/2157
ROB3-08	Introduction to Simulation Engineering	20	J/616/2158
ROB3-09	Process Optimisation	15	L/616/2159
<u>Additional unit</u> which can be chosen to suit local needs, however is <u>not required</u> for the qualification to be awarded.			
ROB3-10	Innovation in Automation	7	F/616/2160

