



QCF Unit and Assessment Specification

Unit title	Working Safely in an Engineering Environment
Ofqual Unit code	L/600/5781
SQA Unit code	FT2R 60
SSC Ref	Unit 78

History of changes

Publication date: March 2012

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Version number	Date	Description	Authorised by

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QCF Unit specification

Title	Working Safely in an Engineering Environment	
Level	2	
Credit value	5	
Learning Outcomes	Assessment Criteria	
The learner will:	The learner can:	
1 Work safely in an engineering environment.	1.1 Comply with their duties and obligations as defined in the Health and Safety at Work Act (HASAWA).	
	1.2 Demonstrate their understanding of their duties and obligations to Health and Safety by carrying out all of the following: <ul style="list-style-type: none"> ◆ applying in principle their duties and responsibilities as an individual under the Health and Safety at Work Act and other relevant current legislation ◆ identifying, within their working environment, appropriate sources of information and guidance on health and safety issues, to include: <ul style="list-style-type: none"> — eye protection and personal protective equipment — COSHH regulations — risk assessments ◆ identifying the warning signs and labels of the main groups of hazardous or dangerous substances ◆ complying at all times with the appropriate statutory regulations and specific regulations relevant to their work. 	
	1.3 Apply safe working practices and procedures at all times.	

Learning Outcomes	Assessment Criteria
<p>The learner will:</p>	<p>The learner can:</p> <p>1.4 Apply safe working practices in an engineering environment, to include all of the following:</p> <ul style="list-style-type: none"> ◆ present themselves in the workplace suitably dressed/prepared for the activities to be undertaken ◆ observe personal protection and hygiene procedures at all times ◆ act in a responsible manner at all times within the working environment ◆ maintain a tidy workplace, with exits and gangways free from obstructions ◆ use tools and equipment safely and only for the purpose intended ◆ carry out their work activities in accordance with legal requirements and the organisations safety policies ◆ take measures to protect others from harm resulting from any work that they are carrying out. <p>1.5 Follow organisational accident and emergency procedures.</p>
<p>2 Work more safely in an engineering environment.</p>	<p>2.1 Comply with all emergency requirements, to include:</p> <ul style="list-style-type: none"> ◆ identifying the appropriate qualified first aiders or appointed person, and the location of first aid facilities ◆ identifying the procedures to be followed in the event of injury to themselves or others ◆ following organisational procedures in the event of fire/fire drills and for the evacuation of premises/work area ◆ identifying and using the procedures to be followed in the event of dangerous occurrences or hazardous malfunctions of equipment, processes or machinery.

Learning Outcomes The learner will:	Assessment Criteria The learner can:
	<p>2.2 Recognise and control hazards in the workplace to minimise risks.</p> <p>2.3 Identify the hazards and risks that are associated with all of the following:</p> <ul style="list-style-type: none"> ◆ their working environment (such as working at height, in confined spaces, hot work) ◆ the tools and equipment that they use (such as machines, power tools, cutting tools) ◆ materials and substances that they use (such as cutting fluids/oils, hydraulic fluids, fluxes) ◆ using working practices that do not follow laid-down procedures. <p>2.4 Use correct manual lifting and carrying techniques.</p> <p>2.5 Demonstrate the following methods of manual lifting and carrying techniques:</p> <ul style="list-style-type: none"> ◆ lifting alone <p>Plus one more of the following:</p> <ul style="list-style-type: none"> ◆ with assistance of others ◆ with mechanical assistance.
<p>3 Know how to work safely in an engineering environment.</p>	<p>3.1 Describe the roles and responsibilities of themselves and others under the Health and Safety at Work Act and other current legislation (such as The Management of Health and Safety at Work Regulations; Workplace Health and Safety and Welfare Regulations; Personal Protective Equipment at Work Regulations; Manual Handling Operations Regulations; Provision and Use of Work Equipment Regulations; Display Screen at Work Regulations, Reporting of Injuries, Diseases and Dangerous Occurrences Regulations).</p> <p>3.2 Describe the specific regulations and safe working practices and procedures that apply to their work activities (such as The Electricity at Work Regulations, Woodworking Regulations).</p>

Learning Outcomes	Assessment Criteria
The learner will:	The learner can:
	<p>3.3 Describe the warning signs for the main groups of hazardous substances defined by Classification, Packaging and Labelling of Dangerous Substances Regulations.</p> <p>3.4 Explain how to locate relevant health and safety information for their tasks, and the sources of expert assistance when help is needed.</p> <p>3.5 Explain what constitutes a hazard in the workplace (such as moving parts of machinery, electricity, slippery and uneven surfaces, dust and fumes, handling and transporting, contaminants and irritants, material ejection, fire, working at height, environment, pressure/stored energy systems, volatile or toxic materials, unshielded processes).</p> <p>3.6 Describe their responsibilities for dealing with hazards and reducing risks in the workplace (such as hazard spotting and safety inspections; the use of hazard check lists, carrying out risk assessments, COSHH assessments and safe systems of working).</p> <p>3.7 Describe the risks associated with their working environment (such as the tools, materials and equipment that they use, spillages of oil and chemicals, not reporting accidental breakages of tools or equipment and not following laid-down working practices and procedures).</p> <p>3.8 Describe the sources of information for safety (such as local work procedures, codes of practice or guidance, the severity of the accident or injury that the hazard may cause).</p>

Learning Outcomes	Assessment Criteria
The learner will:	The learner can:
	<p>3.9 Describe the control measures that can be used to eliminate/reduce the hazard (such as lock-off and permit to work procedures, provision of safe access and egress, use of guards and fume extraction equipment, use of personal protective equipment).</p> <p>3.10 Describe the first aid facilities that exist within their work area and within the organisation in general, and the procedures to be followed in the case of accidents involving injury.</p>
<p>4 Know more about how to work safely in an engineering environment.</p>	<p>4.1 Explain what constitute dangerous occurrences and hazardous malfunctions, and why these must be reported even if no-one was injured.</p> <p>4.2 Describe the procedures for sounding the emergency alarms, evacuation procedures and escape routes to be used, and the need to report their presence at the appropriate assembly point.</p> <p>4.3 Describe the organisational policy with regard to fire fighting procedures; the common causes of fire and what they can do to help prevent them.</p> <p>4.4 Describe the personal protective equipment (PPE) and protective clothing that is available for their areas of activity.</p> <p>4.5 Describe the need to observe personal protection and hygiene procedures at all times (such as skin care (barrier creams, gloves); eye protection (safety glasses, goggles, full face masks); hearing protection (ear plugs, ear defenders); respiratory protection (fume extraction, face masks, breathing apparatus; head protection (caps with hair restraints, protective helmets); foot protection (safety footwear); dangers of ingestion and the importance of washing hands).</p>

Learning Outcomes	Assessment Criteria
The learner will:	The learner can:
	<p>4.6 Explain how to act responsibly within the working environment (such as observing restricted area notices, complying with warning signs, walking not running, using equipment only for its intended purpose, not interfering with equipment or process that are not within their job role, following approved safety procedures at all times).</p> <p>4.7 Describe the methods of manually handling and moving loads (such as pushing, pulling, levering); how to lift and carry loads safely and correctly (such as from ground level, waist high, overhead, reaching over); and the manual and mechanical lifting and moving aids available.</p> <p>4.8 Describe good housekeeping arrangements (such as maintaining cleanliness of their work area; removal of waste materials; storage of materials, tools and equipment and products; maintenance of access and egress (such as clear walkways, emergency exits)).</p> <p>4.9 Explain when to act on their own initiative and when to seek help and advice from others.</p> <p>4.10 Explain to whom they should report in the event of problems that they cannot resolve.</p>

Additional information about the Unit
Unit purpose and aim(s)
To provide the learner with the knowledge and practical skills and procedures required to work safely as an Electro-technical Officer on board a merchant vessel.
Unit expiry date
31 May 2015
Details of the relationship between the Unit and relevant national occupational standards (if appropriate)
Details of the relationship between the Unit and other standards or curricula (if appropriate)
CO1 — Monitor and operate engine room efficiency CO2 — Contribute to an engineer watch. International Maritime Organisation (IMO) standards for training and certification for watchkeeping (stcw) requirements for an Electro-technical Officer at Operational Level.
Assessment requirements specified by a sector or regulatory body (if appropriate)
The performance evidence should be assessed in a workplace or simulated workplace environment. This Unit must be assessed in a work environment and must be assessed in accordance with the 'Common Requirements for National Vocational Qualifications (NVQ) in the QCF' which can be downloaded from Semta's website: http://www.semta.org.uk/training_providers__awarding/national_occupational_standard/qca_assessment_requirements.aspx Additional assessment requirements have been published by Semta. These additional assessment requirements are set down in Semta's Performing Engineering Operations Level 2 Unit assessment strategy which can be downloaded from Semta's website: http://www.semta.org.uk/training_providers__awarding/national_occupational_standard/qca_assessment_requirements.aspx
Endorsement of the Unit by a sector or other appropriate body (if required)
Maritime and Coastguard Agency (MCA)
Location of the Unit within the subject/sector classification system
4.1 Engineering

Additional information about the Unit (cont)
Name of the organisation submitting the Unit
EAL
Availability for use
Shared
Availability for delivery
September 2011
Guided Learning Hours
33

QCF Assessment specification

Assessment (evidence) Requirements

The following evidence is required to demonstrate that learners have the appropriate level of knowledge to work safely in an engineering environment. All Learning Outcomes and Assessment Criteria must be achieved.

Written and/or recorded oral evidence is required for the following:

- ◆ Learning Outcomes three and four

Performance evidence in the workplace or in an appropriate simulated environment is required for the following:

- ◆ Learning Outcome One
- ◆ Learning Outcome Two

This could be achieved through the observation of learners undertaking practical exercises.

An approved Maritime Skills Alliance (MSA) approved Training Record Book (TRB) should be used to record evidence of achievement.

Guidance on Instruments of Assessment

Performance evidence can be generated using an approved Maritime Skills Alliance (MSA) approved Training Record Book (TRB) and/or practical exercises.

Short answer written questions and/or oral interview could be used for the other Outcomes and Assessment Criteria.