



National Unit Specification: general information

UNIT Maritime Environment: An Introduction (SCQF level 5)

CODE F8KV 11

SUMMARY

This Unit is a mandatory Unit in the SCQF level 5 Maritime Skills Course and has been designed to be taken as part of that Course. It may be offered as a free-standing Unit.

The Unit is intended for candidates who wish to develop generic employability skills which are valued by all employers and vocational skills relevant to a career in the Maritime sector. It develops understanding of the weather and its effects on maritime activities in the United Kingdom. Basic navigation tasks are also tackled to enable candidates to plot a course and calculate the distance between two points. This Unit has been designed for candidates in S3 or above but may also be suitable for other candidate groups.

OUTCOMES

- 1 Investigate weather conditions and their effects in the context of the U.K. maritime sector.
- 2 Monitor weather conditions and their effects on maritime activities.
- 3 Perform basic navigation tasks on a marine chart.

RECOMMENDED ENTRY

Entry is at the discretion of the centre.

CREDIT VALUE

1 credit at SCQF level 5 (6 SCQF credit points at SCQF level 5*).

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Administrative Information

Superclass: ZF

Publication date: February 2010

Source: Scottish Qualifications Authority

Version: 01

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CORE SKILLS

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes of this Unit Specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

National Unit Specification: statement of standards

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Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit Specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME 1

Investigate weather conditions and their effects in the context of the United Kingdom maritime sector.

Performance Criteria

- (a) Identify and describe the effects that different weather conditions have on specific maritime activities.
- (b) Identify and describe the effects of high and low air pressure on weather experienced by the maritime sector in the United Kingdom.
- (c) Identify and describe the effects of different wind speeds on surface conditions in the context of the maritime sector.
- (d) Identify and describe a variety of sources of weather information for the United Kingdom maritime sector.

OUTCOME 2

Monitor weather conditions and their effects on maritime activities.

Performance Criteria

- (a) Accurately record specific information on weather conditions over a set period of time.
- (b) Identify the effects that these weather conditions will have on specific maritime activities correctly.

OUTCOME 3

Perform basic navigation tasks on a marine chart.

Performance Criteria

- (a) Correctly identify symbols on a specific marine chart.
- (b) Plot given positions on the chart.
- (c) Plot the true course between two specific points on the chart correctly.
- (d) Calculate the compass course between these two points.
- (e) Calculate the distance between the two points correctly, taking account of the chart scales.

National Unit Specification: statement of standards (cont)

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EVIDENCE REQUIREMENTS FOR THIS UNIT

Performance evidence and written/oral evidence is required to show that all Outcomes and Performance Criteria have been achieved.

The evidence may be gathered at appropriate points throughout the Unit when candidates have developed the necessary skills.

Outcome 1 and 2 — Folio

Candidates will investigate independently, to a given brief, the weather and its effects of maritime activities. The information gathered will be contained in a folio and progress discussed with the teacher/lecturer at an appropriate point during the investigation to ensure the folio is the candidate's own work. A record of the discussion should be retained.

For Outcome 1 candidates will be given a clear investigation brief informing them that the evidence for the folio must cover an identification and description of:

- ◆ the effects of high and low air pressure systems on weather experienced in the United Kingdom. This must include the typical pattern of a depression and an anticyclone and the weather produced.
- ◆ the effects of wind speeds — Beaufort scale — on surface conditions in open water and sheltered water.
- ◆ **two** sources of weather information for the United Kingdom maritime sector to include a synoptic chart and one other from the radio or internet. The description should include the type of information that can be gained from the particular source.
- ◆ the effects that the following weather conditions have on **one** maritime activities:
 - storm/gale force winds
 - fog
 - heavy rain
 - Snow
 - offshore winds
 - onshore winds.

Resources may be shared but candidates must gather information individually. Examples of maritime activities that could be considered are a boat at sea, loading or discharging a boat at the dockside or tourist related activities.

For Outcome 2 candidates should maintain a log book with the recordings of weather conditions. The records should include temperature, wind speed in miles per hour and on the Beaufort scale, wind direction, air pressure, rainfall, extent of cloud cover and visibility. The recording should be carried out on **six** different occasions.

For each set of records the candidate should identify individually the effects of the ambient weather on **one** maritime activity, for example, a boat at sea, loading or unloading a boat at the dockside or tourist related activities. Candidates may have access to notes and information which will help them identify the effects on one maritime activity.

National Unit Specification: statement of standards (cont)

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Outcome 3 — Performance evidence

Candidates, using the given brief, are required to demonstrate by a practical mapping exercise using parallel rulers and dividers that they are able to:

- ◆ identify six of following symbols on a specific marine chart: Lighthouse, Wreck, Sounding, Floating Navigation mark, Drying height, tidal diamond, compass rose, traffic separation scheme, anchorage, offshore oil platform, elevation, Rock.
- ◆ plot a position on the chart from (i) longitude and latitude co-ordinates (ii) range and bearing from a charted feature correctly.
- ◆ plot the true course between two specific points on the chart correctly.
- ◆ calculate the compass course between these two points correctly.
- ◆ calculate the distance between the two points correctly, taking account of the chart scales.

The evidence is to be gathered at an appropriate point in the Unit under supervision and in closed-book conditions.

The National Assessment Bank (NAB) pack provided for this Unit illustrates the standard that should be applied. It includes exemplar folio briefs, marking schedules for Outcomes 1 and 3 and a checklist for Outcome 2. If a centre wishes to design its own assessments for this Unit, they should be of a comparable standard.

National Unit Specification: support notes

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This part of the Unit Specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

This is a mandatory Unit of the Maritime Skills SCQF level 5 Course. The Unit develops the understanding of the weather and its effects on maritime activities in the United Kingdom. Basic navigation tasks are also tackled to enable candidates to plot a course and calculate the distance between two points.

In Outcomes 1 and 2 the candidates will be introduced to the important impact that weather has on all aspects of the maritime industry. They will learn about the dangers faced in bad or inclement weather and how these can be avoided. They will also be introduced to simple weather systems and their formation plus how to recognize these on weather charts using internationally recognised symbols. The recording of the weather will require the delivering centre to have access to certain measuring instruments such as a barometer, thermometer, rain gauge and anemometer.

In Outcomes 3 candidates will develop knowledge and understanding of terrestrial coordinate systems and their relevance to a maritime chart. They will learn how to use a maritime chart to plot the position of a vessel, a true course between two points and the compass course. The distance between two points is calculated.

Candidates will learn about the properties of the marine compass and the magnetic field of the earth. They will be able to describe the difference between True North and Compass North and how this affects the navigation of all vessels. Using given simple maths mnemonics they will be able to convert a compass course to a true course and vice versa.

During this Unit, in addition to the specific vocational skills developed and assessed, candidates will have an opportunity to develop the following employability skills:

- ◆ positive attitude and willingness to learn*
- ◆ maintaining good timekeeping and attendance
- ◆ communication skills*
- ◆ ability to follow instructions*
- ◆ working cooperatively with others
- ◆ working to agreed deadlines*
- ◆ showing respect and consideration for others
- ◆ flexibility and adaptability
- ◆ safe and appropriate handling of equipment*
- ◆ awareness of health and safety awareness
- ◆ understanding of personal survival techniques
- ◆ fire safety awareness
- ◆ confidence to seek feedback
- ◆ reflecting on own performance
- ◆ review and self-evaluation skills
- ◆ understanding of the workplace*

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Development in a number of these employability skills (those marked with an asterisk *) will be clearly identified as a result of evidence generated through the assessment activities for this Unit. There are opportunities in the Unit to develop the remaining skills.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

It is important to ensure that the teacher/lecturer provides candidates taking this Unit with guidance on gathering information on the weather and its effects on the maritime sector. Candidates will need access to a variety of resources in order to collect information about the weather and its effects. This may come from the following examples — newspapers, magazines, websites, and books. The use of the internet, CD ROMS, DVDs and videos and talking to people who work in the maritime sector are all good sources of information. Features on a synoptic chart such as low and high pressure systems, warm and cold fronts and an occluded front should be considered and how these can lead to forecasting the possible weather. Forecasts of weather may be obtained for example from the radio — general and shipping forecasts, television, internet, Meteorological Office. Candidates could try to forecast the following day's weather from a synoptic chart and check as to whether their prediction were accurate. Checking how accurate the weather forecast from the internet is could be another useful exercise to develop candidates understanding of the information provided about the weather.

Marine charts must be used extensively in the delivery of Outcome 3. Candidates must have access to parallel rulers, dividers and drawing compasses and the safe usage of these standard instruments must be ensured.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

In this Unit candidates will perform calculations and take measurements on navigational charts. These activities provide opportunities to develop aspects of the Core Skill of *Numeracy*.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Evidence Requirements are fully expressed in the mandatory section of the Unit Specification.

This should take the form of the following written and/or oral recorded evidence.

To ensure the written and/or recorded oral evidence produced as a result of investigation is the candidate's own work, the content should be discussed with the teacher/lecturer at an appropriate point in the investigation and a record of the discussion should be retained. Assessors, where possible, should give candidates the choice as to their preferred method of submission. The evidence could be in the format of for example, written information, diagrams, charts, graphical information.

All candidates must have access to a chart, parallel rulers, dividers and drawing compasses for the mapping exercise for the assessment of Outcome 3.

Written and/or recorded oral evidence and checklists should be retained in the candidate's folio.

Assessor checklists and other assessment records should be maintained and kept up to date to keep track of candidate progress and to provide evidence for internal and external verification purposes. If centres wish to develop their own assessment instruments these should be of a comparable standard to those contained in the NAB.

National Unit Specification: support notes (cont)

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Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by information and communications technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

The National Assessment Bank (NAB) pack provided for this Unit illustrates the standard that should be applied. It includes exemplar folio briefs, marking schedules for Outcomes 1 and 3 and a checklist for Outcome 2. If a centre wishes to design its own assessments for this Unit, they should be of a comparable standard.

DISABLED CANDIDATES AND/OR THOSE WITH ADDITIONAL SUPPORT NEEDS

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website www.sqa.org.uk/assessmentarrangements