National Unit Specification: general information

UNIT North European Aquaculture: An Introduction (SCQF level 4)

CODE F6T9 10

SUMMARY

Candidates undertaking this Unit will gain an appreciation of the diversity of aquatic species farmed in Northern Europe and an understanding of the environmental requirements of the most commonly farmed species. A basic awareness of the impacts that aquaculture developments can cause will be developed.

OUTCOMES

1 Match species suitable for aquaculture in Northern Europe to appropriate aquatic environments.
2 Describe the possible impacts of aquaculture on North European communities.

RECOMMENDED ENTRY

Entry is at the discretion of the centre.

CREDIT VALUE

0.5 credit at SCQF level 4 (3 SCQF credit points at SCQF level 4*).

**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: SJ

Publication date: May 2009

Source: Scottish Qualifications Authority

Version: 01

National Unit Specification: general information (cont)

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CORE SKILLS

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

There are opportunities for Core Skill development; these are highlighted in the Support Notes of this Unit Specification.

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

Match species suitable for aquaculture in Northern Europe to appropriate aquatic environments.

Performance Criteria

(a) Identify species of aquatic organisms suitable for culture in Northern Europe.
(b) State the types of aquatic environment suitable for given species cultured in Northern Europe.
(c) Select suitable local aquatic environments for given species.

OUTCOME 2

Describe the possible impacts of aquaculture on North European communities.

Performance Criteria

(a) Describe the potential benefits of aquaculture to North European communities.
(b) State the types of business that supply resources to the aquaculture industry in Northern Europe.
(c) State the production processes used to produce different aquaculture end products.
(d) Describe potential sources of conflict arising from aquaculture developments in a North European rural community.

EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Outcome 1 — Written and/or recorded oral evidence

The candidate must:

- identify four species of shellfish and four species of finfish without reference to identification aids
- state the aquatic environments suitable for the culture of two species of shellfish and three species of finfish
- select a suitable local aquatic environment for one species of shellfish or finfish

National Unit Specification: statement of standards (cont)

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For Outcome 2 — Written and/or recorded oral evidence

The candidate must:

- describe two potential benefits of aquaculture to a given local North European community
- state three types of business that supply resources to a given sector of the aquaculture industry
- state a minimum of three production processes for a given aquaculture species that result in different end products
- describe three potential sources of conflict resulting from an aquaculture development

The Assessment Support Pack for this Unit provides appropriate instruments of assessment, assessor checklists and assessor guidance. Centres wishing to develop their own assessments should refer to the assessment support pack to ensure a comparable standard.

Centres must be satisfied that the evidence submitted is the work of individual candidates.

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 20 hours.

GUIDANCE ON THE CONTENT AND CONTEXT FOR THIS UNIT

This is a mandatory Unit within the NPA in Aquaculture at SCQF level 4, but may also be taken as a free-standing Unit.

This Unit is a knowledge based Unit which relates to the whole industry and as such does not align to a specific National Occupational Standards Unit.

Aquatic species commonly cultured in Northern Europe, should be considered, with reference to their environmental requirements, including species dependent on marine, running freshwater and still freshwater environments. Finfish, shellfish and seaweeds could be considered. A general overview of the market potential should be provided for the most significant species, including Atlantic salmon, rainbow trout, cod, scallops, oysters and mussels.

The candidate should be made aware of the businesses and industries that service aquaculture farms and provide essential resources. Specific businesses related to given aquatic species in the candidate's locale will be described, including their role in servicing aquaculture.

It is important for the candidate to understand that aquaculture produce can be processed in different ways, resulting in different end products in the marketplace. For example, production processes for a finfish species could include: gutted, fresh fillets, smoked, canned, marinated, ready meal, frozen, etc.

The benefits that aquaculture developments can bring to North European communities will be explored, alongside the potential impact that aquaculture can have on the environment. Issues commonly raised by the communities dependent on aquaculture and national organisations, should be interpreted for the candidate, raising their general awareness of the importance of the aquaculture industry and providing insights to the challenges key aquaculture sectors face, and how they are being addressed.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

All sectors of aquaculture active within Northern Europe will be revealed to candidates at the outset, using question and answer techniques to establish the candidate's current level of knowledge and establishing the context for the Unit. A broad knowledge of commonly cultured species, emphasising those of most economic significance, could be presented, establishing the platform for subsequent 'investigative' student-centred stages of delivery.

Industry production statistics and aquaculture site distribution data could be provided in a readily accessible form. Candidates could interpret production data and present it graphically to illustrate current levels of production and production trends within Northern Europe, nationally and in their locale. This would help to develop the candidate's awareness of the relative scale of industry sectors in terms of physical production as well as gross financial value.

National Unit Specification: support notes

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Subsequent delivery could adopt a more student centred investigative approach, supported by a restricted range of text and web based resources. Candidates could determine the environmental requirements of given aquatic species. Once a basic understanding of species requirements has been established, candidates could match species to given aquatic environments, through formative assessments delivered through multiple choice offered through a virtual learning environment (VLE).

Having established a broad knowledge of the wealth of aquaculture activity in Northern Europe, and the environmental requirements of given aquatic species, candidates would be better placed to explore local aquaculture activities. Information on local aquatic environments could be provided for local aquaculture sites, and combined with site visits, used to develop the candidate's awareness of the influence of environmental conditions on aquaculture development.

The positive benefits and potential impacts could be explored through a combination of web based resources and site visits, which could include meetings with aquaculture business managers. The learning points could be consolidated after site visits though group discussion and question/answer sessions, as well as further exploration of web based resources.

Candidates could be placed in groups, each working on different sites, or fish species. Work could be shared with the class through summary sheets or short talks from group leaders, helping candidates to prepare for assessment. Centres must be satisfied that the evidence submitted is the work of individual candidates.

A debate or mock meeting between different user groups (eg fisheries trusts, environmental groups and aquaculture supporters) could be held. Teachers should be aware of the arguments and issues from both sides to allow for a meaningful and open discussion.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

Opportunities exist to develop a range of Core Skills, (including *Numeracy, Communication, Working with Others* at SCQF level 4) into the delivery of the Unit.

Outcome 1 requires the candidate to extract information from data provided and analyse it against predetermined ranges. This could be presented graphically.

Outcome 2 requires candidates to work in teams and communicate, developing their awareness of citizenship through active debate.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Outcome 1 could be assessed through a range of approaches, including:

- an identification test, requiring candidates to identify aquatic species (closed book)
- multiple choice matching given aquatic species to given aquatic environments (closed book)
- short answer response questions using given water quality parameters for the locale (open book)

National Unit Specification: support notes (cont)

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Outcome 2 requires:

- written and/or recorded oral evidence completed to a given structure, for one species of shellfish or finfish in a given or chosen situation.

Opportunities exist for multiple choice assessment for Outcome 1 Performance Criterion (a)–(b).

Time should be allowed for any necessary re-assessment.

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 Communication 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)*.

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**