Higher National Unit specification

General information for centres

Unit title: Research and Methodology

Unit code: F1BS 34

Unit purpose: This Unit is designed to introduce candidates to the importance of the research process within their area of study.

On completion of the Unit the candidate should be able to:

1 Describe the basic research process model applied in a specific area of study.
2 Explain the importance of research in a specific area of study.
3 Apply data handling techniques and interpret key information.

Credit points and level: 1 HN Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**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.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. It would be beneficial if the candidate had competence in communication, numeracy and information technology as well as an extensive overview of the subject area being studied.

- EE3T 12 *Communication (NC)*
- Higher English or its component Units
- Core Skill Communication Intermediate 1
- Core Skill Numeracy Intermediate 1
- Core Skill Information Technology Intermediate 1

Core Skills: There are opportunities to develop the Core Skills of Numeracy, Information Technology and Communication at Higher in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

General information for centres (cont)

Unit title: Research and Methodology

Assessment: The Unit will be holistically assessed by a single instrument of assessment covering all Unit Outcomes. This will take the form of one closed-book assessment with structured questions and stimulus, requiring a response of approximately 1,500 words. This will be conducted under supervision. It is recommended that the assessment should be undertaken in one sitting of approximately 2–3 hours duration.

An assessment exemplar and marking guidelines have been produced to indicate the national standard of achievement required at SCQF level 7.

Higher National Unit specification: statement of standards

Unit title: Research and Methodology

Unit code: F1BS 34

The sections of the Unit stating the Outcomes, knowledge and/or skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the knowledge and/or skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Describe the basic research process model used in a specific area

Knowledge and/or skills

- Literature review and plan of research topic
- Formulation of hypothesis
- Operationalism: choice of research method, definition of concepts, measurement setting, sampling
- Conducting the research
- Processing of results and analysis
- Presentation of results

Outcome 2

Explain the importance of research in a specific area

Knowledge and/or skills

- Primary and secondary sources of data
- Qualitative and quantitative data
- Primary and secondary sources of reading
- Data collection methods

Outcome 3

Apply data handling techniques and interpret key information

Knowledge and/or skills

- Data handling techniques
- Interpret key information

Higher National Unit specification: statement of standards (cont)

Unit title: Research and Methodology

Evidence Requirements for this Unit

To achieve this Unit each candidate will need evidence to demonstrate his/her knowledge and/or skills for Outcomes 1, 2 and 3.

The Unit will be assessed holistically by a single instrument of assessment covering all Unit Outcomes. This will take the form of one assessment with structured questions and stimuli, requiring a response of approximately 1,500 words. Candidates will not know the questions in advance. However, the broad topic area should be handed out at an appropriate point in the delivery of the Unit. The use of notes, textbooks, handouts and other materials will not be permitted with the exception of mathematical formulae which will be issued by the tutor/lecturer before the assessment begins. It is recommended that the assessment should be undertaken in one sitting of approximately 2-3 hours' duration. The assessment will be conducted under supervision.

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can:

- describe the importance of following a research process in a specific subject area
- describe what is involved in each stage of the research process
- distinguish between primary and secondary sources of data
- distinguish between qualitative and quantitative data
- justify primary and secondary sources of reading
- explain data collection methods
- apply a minimum of data handling techniques, relevant to two disciplines in a specific area of study, from information presented to candidates
- correctly interpret information from a minimum of two data handling techniques, relevant to two disciplines in a specific area

The data handling techniques are:

- Graphs and Charts eg Pie Charts, Bar Charts, Histograms, Scattergrams
- Table of Results
- Measures of Central Tendency
- Measures of Dispersion

Skills in numeracy, which underpin the production and interpretation of data handling techniques in a specific subject area of study, are an essential part of this Unit. As part of Outcome 3, candidates must:

- Solve problems involving one numerical or statistical concept, eg negative numbers, quantitative and qualitative data, discrete and continuous data, numbers represented by symbols, a statistical concept such as range.
- Decide which operations are to be carried out and the order in which to carry them out. At this level, candidates must show that they can carry out calculations involving four operations.
- Carry out a number of sustained calculations or at least one complex calculation, eg a complex statistical calculation such as calculating standard deviation or correlation co-efficient.

Higher National Unit specification: statement of standards (cont)

Unit title: Research and Methodology

Assessment Guidelines for this Unit

This Unit will be assessed holistically, by combining Outcomes 1, 2 and 3 for assessment purposes.

By way of guidance only, it may be appropriate to structure assessment questions around the following scheme:

- sources of data
- types of data
- methods of data collection
- applying techniques of handling data
- interpreting data
- description of stages of the research process

In Outcome 2, it is envisaged that candidates will give a brief explanation of all issues identified in the evidence requirements. Candidates should provide a more detailed account of any issue relevant to the discipline(s) studied.

In Outcome 3, a minimum of two data handling techniques to the subject area of study should be applied. Candidates will be required to interpret information given by means of extracting information from, for example, a bar chart or histogram.

Administrative Information

Unit code: F1BS 34

Unit title: Research and Methodology

Superclass category: KB

Original date of publication: February 2007

Version: 03 (December 2011)

History of Changes:

Version	Description of change	Date
02	'Evidence Requirements for this Unit' — last two bullet points removed from first set of bullet points as they were repeated.	28/08/08
03	Clarification that the assessment is closed-book.	20/12/11

Source: SQA

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Research and Methodology

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

The Unit is likely to form part of a group award and is primarily designed to provide candidates with knowledge of the role and importance of research within their particular subject area. The Unit also introduces the candidate to the importance of the research process and develops their skills in analysing and interpreting data. Wherever possible, examples used should have relevance to the subject Units studied previously or simultaneously.

Guidance on the delivery and assessment of this Unit

It is envisaged that an integrated approach to teaching the Unit will be adopted. Tutors/Lecturers may choose to deliver the content of Outcome 1 ie on the basic research process model, toward the end of the Unit in order to contextualise the delivered content of Outcomes 2 and 3. Alternatively they may wish to deliver Outcome 1 towards the beginning of the Unit in order to inform the subsequent disciplines being studied.

In completing Outcome 3 candidates are expected to be able to:

- Solve problems involving one numerical or statistical concept.
- Decide upon the operations to be undertaken and sequence that should be followed when carrying them out at this level, candidates must show that they can carry out calculations involving four operations.
- Carry out a number of sustained calculations or at least one complex calculation.

One possible way of achieving the Outcome is to carry out a standard deviation calculation on a given set of data provided by the tutor/lecturer. The candidate will be provided with a standard deviation formula. Data may also be provided to permit the candidate to produce a graphical representation, histogram, bar chart or similar.

The Unit will be assessed holistically by a single instrument of assessment covering all Unit Outcomes. This will take the form of one assessment with structured questions and stimuli, requiring a response of approximately 1,500 words. Candidates will not know the questions in advance although the stimulus material may be issued in advance.

Opportunities for developing Core Skills

Candidates will develop Numeracy skills as they interpret and apply key information from a minimum of two data handling techniques as part of research activities. Accuracy in the interpretation of figures and statistical data and the ability to calculate and present complex resource information graphically and in writing underpins the competencies developed in the Unit, and the Core Skill is overtaken at SCQF level 5. Skills in completing sustained complex calculations and effective presentation of data could be further enhanced by access to appropriate technology, and by on line support packages.

Higher National Unit specification: support notes (cont)

Unit title: Research and Methodology

Instruction in the most effective use of learning resource centre systems will support candidates in using Information Technology as a research tool. Formative work accessing and evaluating electronic sources which provide a range of complex information, current facts and ideas on professional concerns and issues should be encouraged, in order that candidates are able to read in depth and in detail reference materials from a range of Internet sites, electronic databases and journal archives. Checklists which might be provided to support analytical evaluation could include criteria to ensure a check on the currency, authority, accuracy, and balance of all information accessed. The need to develop efficient systems of recording, coding and storing outline research information for ease of reference, such as logs, diaries, and notes folders will be emphasised. Where practical, candidates should have opportunities for computerised record keeping and be aware of the importance of saving and performing back ups. Although skills in written communication are not formally assessed, candidates should be expected to produce and present written materials to a professional standard. They should express essential ideas, information and conclusions accurately and coherently, use a formal structure, recognised format, and accurate, spelling punctuation and syntax.

Open learning

As this Unit involves individual research it is suitable for delivery by some form of open, distance or online learning, assessed in conditions where arrangements have been put in place to assure the authenticity of the candidate's work.

For further information and advice please refer to *Assessment and Quality Assurance for Open and Distance Learning (SQA, February 2001 – publication code A1030).*

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* **(www.sqa.org.uk)**.

General information for candidates

Unit title: Research and Methodology

This Unit introduces you to the role and importance of research within the subject area you are studying.

A range of research methods will be studied relevant to the subject area you are studying. It is essential for you to understand the differences between primary/secondary and qualitative/quantitative research methods. The use of visual and statistical representations may be needed when presenting evidence, therefore you are required to demonstrate competency in a range of graphical representations and statistical techniques.

On completion of this Unit you will be able to describe the basic research process model applied in your specific area of study, explain the importance of research in your specific area of study and apply data handling techniques and interpret key information.

The Unit will be assessed holistically by a single instrument of assessment covering all Unit Outcomes. This will take the form of one assessment with structured questions and stimuli, requiring a response of approximately 1,500 words. Candidates will not know the questions in advance. However, the broad topic area should be handed out at an appropriate point in the delivery of the Unit. The use of notes, textbooks, handouts and other materials will not be permitted with the exception of mathematical formulae which will be issued by the tutor/lecturer before the assessment begins. It is recommended that the assessment should be undertaken in one sitting of approximately 2–3 hours' duration. The assessment will be conducted under supervision.