![SQA logo]

Higher National Unit specification

General information for centres

Unit title: Biomedical Investigations

Unit code: DP4R 35

Unit purpose: This Unit is designed to enable candidates to examine techniques used in medical laboratory sciences in the diagnosis of disease and interpret results. It is a specialised Unit designed for candidates working towards an HND in Biomedical sciences.

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

1   Investigate the roles of medical laboratory sciences in the diagnosis of disease.
2   Investigate the roles of medical laboratory sciences in the management of patients.
3   Relate clinical results to diagnosis of disease and patient management.

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

*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. However it is recommended that candidates possess the level 8 HN unit: Human Body Structure and Function (DG71 35) or equivalent.

Core skills: There may be opportunities to gather evidence toward the Core Skills of Communication and Problem Solving at Higher level 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.

Assessment: Outcomes 1 and 2 should be holistically assessed by ~~an assessment undertaken in~~ a closed-book ~~controlled~~ supervised ~~conditions.~~ assessment. Candidates should obtain a least 60% of the marks available in order to pass. Outcome 3 should be assessed by a case study undertaken in open-book supervised conditions, with a cut of score of 60%.~~.~~

Higher National Unit specification: statement of standards

Unit title: Biomedical Investigations

Unit code: DP4R 35

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

Investigate the roles of medical laboratory sciences in the diagnosis of disease

Knowledge and/or Skills

♦ sample taking
♦ scanning methods
♦ medical laboratory techniques

Outcome 2

Investigate the roles of medical laboratory sciences in the management of patients

Knowledge and/or Skills

♦ concept of reference range
♦ concept of variation

Evidence Requirements for Outcomes 1 and 2

Candidates will need to provide evidence to demonstrate their knowledge and/or skills of Outcomes 1 and 2 by responding to a question paper. The evidence should be generated under closed-book controlled conditions. The test of approximately one hour's duration could have a cut off score of 60% and should cover all of the knowledge and/or skills listed in both Outcomes including a data handling exercise on statistical analysis of reference range for Outcome 2.

Assessment guidelines for Outcomes 1 and 2

Outcomes 1 and 2 should be holistically assessed by a closed-book supervised assessment. Candidates should obtain a least 60% of the marks available in order to pass. Outcome 3 should be assessed by a case study undertaken in open-book supervised conditions, with a cut of score of 60%.

~~**Assessment guidelines for Outcomes 1 and 2**~~

~~Outcome 1 and 2 should be assessed holistically by a closed-book test of one hour with a cut off score of 60%. This could consist of multiple choice (10 marks) and restricted response questions (20 marks).~~

Higher National Unit specification: statement of standards (cont)

Unit title: Biomedical Investigations

Outcome 3

Relate clinical results to diagnosis of disease and patient management

Knowledge and/or Skills

- ♦ medical laboratory data
- ♦ results relevant to patient diagnosis
- ♦ results relevant to patient management
- ♦ monitoring of drug therapy

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by responding to questions based on a case study. This assessment is open-book and should be completed under supervised conditions in a controlled environment.

Assessment Guidelines

Outcome 3 should be assessed by a case study undertaken in supervised, open-book conditions ~~of one hour's duration~~ with a cut off score of 60%.

It is recommended that the case study take the form of a patient history with associated questions. The case study could be contextualised and offer sufficient information to allow candidates to present an informed solution using approved notes and texts. Questions attached to the case study should ensure candidates are able to display knowledge and understanding and draw conclusions in addition to extracting facts.

Administrative Information

Unit code: DP4R 35

Unit title: Biomedical Investigations

Superclass category: PE

Original date of publication: August 2005

Version: 04 (June 2009)

History of changes:

Version	Description of change	Date
02	Previous versions were made before the introduction of the History of Changes table.	2005
03	Previous versions were made before the introduction of the History of Changes table.	February 2006
04	Changes made to standardise assessment guidelines.	03/06/09

Source: SQA

Higher National Unit specification: support notes

Unit title: Biomedical Investigations

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 Unit is mandatory within the HND Biomedical Sciences Group Award framework. It examines the techniques used in medical laboratory sciences in the diagnosis of disease and interprets the results.

Outcome 1

♦ Sample taking:
  — body fluids (blood, urine, CSF, sputum)
  — tissue samples (biopsy, smear)
  — faeces

♦ Scanning methods:
  — X-rays
  — CAT scan
  — ultrasound
  — magnetic resonance imaging (MRI)

♦ Medical laboratory techniques:
  — analytical chemical methods
  — microscopic study of blood
  — clotting
  — biochemical analysis of blood
  — immunology testing
  — microbiological techniques
  — tissue studies

Outcome 2

♦ Concept of reference range:
  — RBC count, blood gases
  — mineral levels
  — blood sugar
  — hormone levels
  — enzyme function
  — liver function
  — renal function

♦ Variation:
  — within and between individuals
  — within and between laboratories
  — quality control

Higher National Unit specification: support notes (cont)

Unit title: Biomedical Investigations

Outcome 3

♦ Patient diagnosis**:**
— hormone disturbances
— enzymes disturbances
— poisonous agents
— infection
— tumour growth
— immunity status
— tissue typing

♦ Patient management:
— treatment types

♦ Monitoring of drug therapy:
— antibiotic blood level
— thyroid function test
— blood level of drugs

Guidance on the delivery and assessment of this Unit

This Unit forms part of the mandatory section in the Group Award, HND Biomedical Sciences.

Laboratory experiments and data handling/case study exercises should be carried out at appropriate times during each Outcome. Examples of these could include examining slides of RBC in different types of anaemia, physiological measurement of lung or circulatory function, ELISA, statistical exercises on blood glucose results. A visit to NHS hospital biomedical laboratories is recommended.

The closed-book assessment should be given on completion of Outcomes 1 and 2 and the case study after Outcome 3. Outcomes 1 and 2 lends itself to a site visit eg a hospital.

Open learning

If this Unit is delivered by open or distance learning methods, additional planning resources may be required for candidate support, assessment and quality assurance.

A combination of new and traditional authentication tools may have to be devised for assessment and reassessment purposes.

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**

General information for candidates

Unit title: Biomedical Investigations

This is a 1 credit HN Unit at SCQF level 8. This Unit consists of three Outcomes and is assessed by means of a holistic assessment under closed-book supervised conditions and completion of one case study which requires the submission of a report under supervised open-book conditions.

Outcome 1 demonstrates knowledge of different samples taking and scanning methods and various medical laboratory techniques.

Outcome 2 explains the concept of normal range through questions and data analysis and demonstrates knowledge of the monitoring of drug therapy.

Outcome 3 evaluates biomedical information using case studies by relating clinical results and other medical laboratory data to patient diagnosis and management.