SCOTTISH QUALIFICATIONS AUTHORITY

National Unit Specification: general information

UNIT Mathematics 2 (Intermediate 2)

NUMBER D322 11

COURSE Mathematics (Intermediate 2)

SUMMARY

This unit is the second of two mandatory units which, together with one optional unit, comprise the Intermediate 2 Mathematics course. Mathematics 2 (Int 2) provides candidates with the opportunity to study further aspects of mathematics, including trigonometry and solution of simultaneous equations and further aspects of statistics.

OUTCOMES

1 Use trigonometry.
2 Solve simultaneous linear equations.
3 Use graphs, charts and tables.
4 Use simple statistics.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates will normally be expected to have attained one of the following:

- *Mathematics 1 (Int 2)*
- equivalent

Administrative Information

Superclass: RB

Publication date: November 1999

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Version: 03

National Unit Specification: general information (cont)

UNIT Mathematics 2 (Intermediate 2)

CREDIT VALUE

1 credit at Intermediate 2.

CORE SKILLS

This unit gives automatic certification of the following:

Complete core skills for the unit	Numeracy	Int 2
Additional core skills components for the unit	None	

Additional information about core skills is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

National Unit Specification: statement of standards

UNIT Mathematics 2 (Intermediate 2)

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 the Scottish Qualifications Authority.

OUTCOME 1

Use trigonometry.

Performance criteria

(a) Calculate the area of a triangle using trigonometry.
(b) Solve problems using Sine and Cosine rules.

OUTCOME 2

Solve simultaneous linear equations.

Performance criteria

(a) Solve graphically a pair of simultaneous linear equations in two variables.
(b) Solve algebraically a pair of simultaneous linear equations in two variables.

OUTCOME 3

Use graphs, charts and tables.

Performance criteria

(a) Find the quartiles from a data set.
(b) Construct a boxplot from a data set.
(c) Construct a piechart.

National Unit Specification: statement of standards (cont)

UNIT Mathematics 2 (Intermediate 2)

OUTCOME 4

Use simple statistics.

Performance criteria

(a) Calculate the standard deviation from a data set.
(b) Determine the equation of a best-fitting line and use it to estimate a y value given the x value.
(c) Assign probability to an event.

Evidence requirements

Although there are various ways of demonstrating achievement of the outcomes, evidence would normally be presented in the form of a closed book test under controlled conditions. Examples of such tests are contained in the National Assessment Bank.

In assessments, candidates are required to show their working in carrying out algorithms and processes.

National Unit Specification: support notes

UNIT Mathematics 2 (Intermediate 2)

This part of the unit specification is offered as guidance. The support notes are not mandatory.

While the 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

Each mathematics unit at Intermediate 2 level aims to build upon and extend candidates' mathematical knowledge and skills. Within Outcome 1, the right-angled trigonometry introduced at Intermediate 1 level is extended to include the Sine and Cosine Rules.

Outcome 2 introduces the solution of simultaneous linear equations both graphically and algebraically.

In Outcome 3, the statistics contained at Intermediate 1 level is extended to include the construction of pie charts and boxplots. In Outcome 4 the calculation of statistical measures is extended to standard deviation, the work on probability becomes more formalised and candidates are introduced to regression.

The recommended content for this unit can be found in the course specification. The *detailed content* section provides illustrative examples to indicate the depth of treatment required to achieve a unit pass and advice on teaching approaches.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Candidates should be encouraged, throughout the unit, to make use of their skills of mental calculation, to make efficient use of calculators, and to apply the strategy of checking. Numerical checking or checking a result against the context in which it is set is an integral part of every mathematical process. In many instances, the checking can be done mentally, but on occasions, to stress its importance, there should be evidence of a checking procedure within the calculation. There are various checking procedures which could be used:

- relating to a context - 'How sensible is my answer?'
- estimate followed by a repeated calculation
- calculation in a different order

Further advice on learning and teaching approaches is contained within the Subject Guide for Mathematics.

National Unit Specification: support notes (cont)

UNIT Mathematics 2 (Intermediate 2)

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The assessment for this unit will normally be in the form of a closed book test. Such tests should be carried out under supervision and it is recommended that candidates attempt an assessment designed to assess all the outcomes within the unit. Successful achievement of the unit is demonstrated by candidates achieving the thresholds of attainment specified for all the outcomes in the unit. Candidates who fail to achieve the threshold(s) of attainment need only be retested on the outcome(s) where the outcome threshold score has not been attained. Further advice on assessment and retesting is contained within the National Assessment Bank.

It is expected that candidates will be able to achieve the algebraic, trigonometric and statistical performance criteria in the unit without the use of computer software or sophisticated calculators.

In assessments, candidates are required to show their working in carrying out algorithms and processes.

SPECIAL NEEDS

This unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements for Candidates with Special Needs/Candidates whose First Language is not English* (SQA, 1998).