



## **Advanced Higher Statistics**

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### **Draft National Course Assessment Specification**

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**Valid from August 2015**

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Please refer to the note of changes at the end of this Course Assessment Specification for details of changes from previous version (where applicable).

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# Course outline

**Course title:** Advanced Higher Statistics

**SCQF level:** 7 (32 SCQF credit points)

**Course code:** to be advised

**Course assessment code:** to be advised

The purpose of the Course Assessment Specification is to ensure consistent and transparent assessment year on year. It describes the structure of the Course assessment and the mandatory skills, knowledge and understanding that will be assessed.

## Course assessment structure

Component 1 — question paper 100 marks

**Total marks 100 marks**

This Course includes eight SCQF credit points to allow additional time for preparation for Course assessment. The Course assessment covers the added value of the Course.

## Equality and inclusion

This Course Assessment Specification has been designed to ensure that there are no unnecessary barriers to assessment. Assessments have been designed to promote equal opportunities while maintaining the integrity of the qualification.

For guidance on assessment arrangements for disabled learners and/or those with additional support needs, please follow the link to the Assessment Arrangements web page: [www.sqa.org.uk/sqa/14977.html](http://www.sqa.org.uk/sqa/14977.html).

Guidance on inclusive approaches to delivery and assessment of this Course is provided in the *Course Support Notes*.

# Assessment

To gain the award of the Course, the learner must pass all of the Units as well as the Course assessment. Course assessment will provide the basis for grading attainment in the Course award.

## Course assessment

SQA will produce and give instructions for the production and conduct of Course assessments based on the information provided in this document.

## Added value

The purpose of the Course assessment is to assess added value of the Course as well as confirming attainment in the Course and providing a grade. The added value for the Course will address the key purposes and aims of the Course, as defined in the Course Rationale. It will do this by addressing one or more of breadth, challenge, or application.

In this Course assessment, added value will focus on the following:

- ◆ breadth — drawing on knowledge and skills from across the Course
- ◆ challenge — requiring greater depth or extension of knowledge and skills
- ◆ application — requiring application of knowledge and skills in practical or theoretical contexts as appropriate

This added value consists of:

- ◆ using a range of complex statistical concepts
- ◆ identifying and using appropriate statistical models and skills
- ◆ using mathematical reasoning skills to extract and interpret information, think logically and evaluate evidence
- ◆ communicating conclusions, exhibiting appreciation of their limitations
- ◆ explaining the consequences of choice of method

To achieve success in the Course, learners must show that they can apply knowledge and skills acquired across the Course to unseen situations.

The question paper requires learners to demonstrate aspects of breadth, challenge and application in appropriate contexts for statistics. The use of a calculator will be permitted.

## **Grading**

Course assessment will provide the basis for grading attainment in the Course award.

The Course assessment is graded A–D. The grade is determined on the basis of the total mark for the Course assessment.

A learner's overall grade will be determined by their performance across the Course assessment.

### **Grade description for C**

For the award of Grade C, learners will have demonstrated successful performance in all of the Units of the Course. In the Course assessment, learners will typically have demonstrated successful performance in relation to the mandatory skills, knowledge and understanding for the Course.

### **Grade description for A**

For the award of Grade A, learners will have demonstrated successful performance in all of the Units of the Course. In the Course assessment, learners will typically have demonstrated a consistently high level of performance in relation to the mandatory skills, knowledge and understanding for the Course.

### **Credit**

To take account of the extended range of learning and teaching approaches, remediation, consolidation of learning and integration needed for preparation for external assessment, six SCQF credit points are available in Courses at National 5 and Higher, and eight SCQF credit points in Courses at Advanced Higher. These points will be awarded when a grade D or better is achieved.

## **Structure and coverage of the Course assessment**

The Course assessment will consist of one Component: a question paper.

### **Component 1 — question paper**

The purpose of the question paper is to assess statistical skills. A calculator may be used.

The question paper will sample the skills, knowledge and understanding that are contained within the 'Further mandatory information on Course coverage' section at the end of this Course Assessment Specification.

The question paper will consist of a series of short response questions, extended response questions and short case studies set in contexts that require the application of skills developed in the Course. Learners will be expected to communicate responses clearly and to justify solutions. The paper will have 100 marks.

## **Setting, conducting and marking of assessment**

### **Question paper**

The question paper will be set and marked by SQA, and conducted in centres under conditions specified for external examinations by SQA. Learners will complete this in 3 hours.

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## Further mandatory information on Course coverage

The following gives details of mandatory skills, knowledge and understanding for the Advanced Higher Statistics Course. Course assessment will involve sampling the skills, knowledge and understanding. This list of skills, knowledge and understanding also provides the basis for the assessment of Units of the Course.

### Work in progress

The approach adopted here will be to consider each of the broad skills areas identified within the Evidence Requirements for the Units, eg skills associated with statistical inference. The table below will show this information. The column on the left will list or, where appropriate, combine the methods and concepts associated with these broad skills. The right hand column will provide the detail about the methods and concepts used to apply these skills, which may be assessed in the Course assessment.

The example below shows how this will be set out and can be linked to the Evidence Requirements for the Unit *Statistical Inference*.

<b>Skills associated with statistical inference</b>	
The learner will use statistical skills and apply them in context	
Identifying and using appropriate random sampling methods	<ul style="list-style-type: none"> <li>◆ Describing and distinguishing between simple random, systematic, stratified and cluster sampling</li> <li>◆ Appreciating the dangers of non-random sampling methods, such as quota sampling</li> </ul>
Using the central limit theorem (CLT)	<ul style="list-style-type: none"> <li>◆ Demonstrating appropriate use of the CLT, the standard error of the mean and the distribution of the sample mean and proportion</li> <li>◆ Estimating the population mean and standard deviation from corresponding sample statistics</li> </ul>
Obtaining confidence intervals	<ul style="list-style-type: none"> <li>◆ Calculating a confidence interval for the population mean and an approximate confidence interval for the population proportion</li> </ul>
Using control charts	<ul style="list-style-type: none"> <li>◆ Constructing a 3-sigma control chart for the sample mean or proportion, perhaps with 2-sigma warning limits</li> <li>◆ Interpreting a 3-sigma control chart</li> </ul>

# Administrative information

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**Published:** December 2012 (draft version 1.0)

**Superclass:** to be advised

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## History of changes to Course Assessment Specification

Course details	Version	Description of change	Authorised by	Date

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Note: You are advised to check SQA's website ([www.sqa.org.uk](http://www.sqa.org.uk)) to ensure you are using the most up-to-date version of the Course Specification.