

## Mathematics of Mechanics



This update focuses on the development of Advanced Higher, with information relevant to your subject and details of the support available to you.

Updates regarding National 3 to National 5 and Higher can be found in the 'Updates and Announcements' section of the relevant **subject pages**. I would encourage you to make regular use of our subject pages, where you will find support documents, answers to common questions, and links to other areas of interest. You can also sign up for 'My Alerts', SQA's e-mail update service, that notifies you whenever content you are interested in is added or updated on SQA's website. Visit **[www.sqa.org.uk/myalerts](http://www.sqa.org.uk/myalerts)** to register.

I hope you find the following update helpful, and please contact me if you have any questions.

**Alison Plummer**  
Qualifications Development Manager

---

---

## The Qualifications Development Team

**Alison Plummer**  
Qualifications Development Manager

**John Parker**  
Qualifications Development Consultant

**Alan Gourlay**  
Qualifications Development Consultant

**John Reilly**  
Qualifications Development Consultant

**Julie Lynn**  
Qualifications Development Officer

## Assessment support

Package 1 of Unit assessment support for Advanced Higher is available now from SQA's secure website. You can arrange access to secure materials through your SQA Co-ordinator; these must be stored securely and treated as confidential.

Over the coming year, we will publish the following assessment support materials for Advanced Higher Courses:

<b>January 2015</b>	Course Comparison document Guidance on the use of past papers
<b>February 2015</b>	Specimen Question Paper and Marking Instructions Unit assessment support package 2
<b>March 2015</b>	Coursework information
<b>April 2015</b>	Unit assessment support package 3
<b>December 2015</b>	Exemplar Question Paper and Marking Instructions

## Updates to documents

We will make planned updates to the Advanced Higher documents, following the publication of Advanced Higher Specimen Question Papers, coursework information and Unit assessment support packs. We will also finalise package 1 of Unit assessment support, following the publication of packages 2 and 3.

The schedule for publishing the updated documents is as follows:

<b>April 2015</b>	Mandatory documents (Unit Specifications, Course Specifications and Course Assessment Specifications)
<b>May 2015</b>	Advice and guidance documents (Course and Unit Support Notes) and Unit assessment support packs

These updates are to ensure consistency between the assessment support materials, advice and guidance documents and the documents containing mandatory information.

The Notification of Changes spreadsheet will be updated for Advanced Higher following the publication of any revised documents.

---

---

## Planned changes to Advanced Higher Mathematics documents:

### Course Assessment Specification

The Course Assessment Specification will be amended to incorporate changes to the mandatory content:

- **Linear and Parabolic Motion**
  - Assessment Standard 1.1 — the sub-skill ‘Working with rates of change with respect to time’ will change to ‘Working with rates of change with respect to time in one dimension’.
- **Force, Energy and Periodic Motion**
  - Assessment Standard 1.1 — the three sub-skills ‘Using the concepts of kinetic and potential energy’, ‘Applying the work-energy principle’ and ‘Using the concept of conservation of energy’ will become ‘Using the concepts of kinetic and/or potential energy to applying the work-energy principle’ and ‘Using the concepts of kinetic and/or potential energy within the concept of conservation of energy’.
- **Mathematical Techniques for Mechanics**
  - Assessment Standard 1.1 will change from ‘Applying algebraic skills to expansion of expressions and partial fractions’ to ‘Applying algebraic skills to partial fractions’. The sub-skill ‘Expand expressions of the form  $(ax+by)^n$ ’ will be removed.
  - Assessment Standard 1.2 — the sub-skill ‘Differentiating some trig, exponential and logarithmic functions’ will change to ‘Differentiating exponential and logarithmic functions’. The sub-skills ‘Differentiating functions using the product rule’ and ‘Differentiating functions using the quotient rule’ will be merged to ‘Differentiating functions given in the form of a product and/or in the form of a quotient’. The sub-skill ‘Differentiating functions expressed implicitly’ will change to ‘Finding the derivative of functions defined implicitly’.
  - Assessment Standard 1.3 — the sub-skill ‘Integrating proper rational functions using partial fractions, where the denominator has degree  $\leq 3$  and can be easily factorised’ has been removed and will be tested under the sub-skill ‘Integrating expressions using standard results’. Assessment Standard 1.4 — the sub-skill ‘Using differential equations in context’ has been removed as this will not be tested in this Unit. It can still be tested at Course level.

***It is important that staff delivering the new Advanced Higher Courses in session 2015-16 read the full suite of documents for their subjects, as well as those relating to assessment. We also advise staff attending the Advanced Higher support events to read these documents in preparation.***

***For more information on documents and assessment support materials, visit [www.sqa.org.uk/supportdocuments](http://www.sqa.org.uk/supportdocuments)***

## Support and guidance

Following consultation and feedback from stakeholders it has been agreed that a formula sheet will be made available to candidates for use during assessment. The formula sheet should act as an ‘aide memoire’ to candidates undertaking assessment and should not be regarded as a substitute for learning and understanding.

---

---

## Looking ahead to 2015–16

The new Advanced Higher Courses go live from August 2015. SQA will continue to work closely with centres throughout the implementation of these Courses to ensure you have the support you need to prepare your learners for assessment.

We will also work closely with centres during the verification process to identify exemplar materials for Advanced Higher that can be shared with you, to help enhance your understanding of the standards required.

A series of implementation events for Mathematics & Mathematics of Mechanics will take place on the following dates:

- 6 March 2015 (Glasgow)
- 13 March 2015 (Stirling)
- 20 March 2015 (Inverness)
- 27 March 2015 (Aberdeen)
- 2 April 2015 (Edinburgh)

A separate implementation event solely for Statistics will take place on:

- 1 April 2015 (Edinburgh)

If you wish to attend any of these events, please follow this [link](#).

### Contact SQA

For centre enquiries, please contact our Business Development and Customer Support Team on:

**Tel:** 0303 333 0330

**Fax:** 0354 213 5000

**E-mail enquiries:** [mycentre@sqa.org.uk](mailto:mycentre@sqa.org.uk)

---