

Physics

Points of change and areas of stability across National 3, National 4 and National 5

The new National Courses combine popular and relevant topics of study from Standard Grade and Intermediate 1 and 2 Courses, as well as introducing revised content and revised methods of assessment, increasing personalisation and choice for learners. Physics Courses are explored through the following areas of study:

- ◆ Electricity and Energy
- ◆ Waves and Radiation
- ◆ Dynamics and Space

Through these areas of study, learners will develop specific skills for learning, skills for life and skills for work. The development of subject-specific and generic skills is central to all Courses. Learners will develop these skills and techniques in context and they should be made aware of the skills they are developing and of their transferability. It is this aspect of skills development that will help learners progress to further study or the world of work.

Course/level	National 3 (SCQF 3)	National 4 (SCQF 4)	National 5 (SCQF 5)
Areas/topics of study	<p>At National 3, the Course is designed to allow a considerable degree of flexibility in the study of the key areas thus increasing personalisation and choice for learners.</p> <p>Much of the Course content will be familiar to centres currently delivering Physics at Access 3 level. However, the content has been reviewed and updated.</p> <p>The key areas for this Course are:</p> <ul style="list-style-type: none"> ◆ energy sources ◆ electricity ◆ energy transfer ◆ wave properties ◆ light ◆ colour ◆ optical instruments ◆ electromagnetic radiation ◆ sound 	<p>At National 4, the Course is designed to allow a considerable degree of flexibility in the study of the key areas thus increasing personalisation and choice for learners.</p> <p>Much of the Course content will be familiar to centres currently delivering Physics at Intermediate 1 or at Standard Grade General level. However, the content has been reviewed and updated.</p> <p>The key areas for this Course are:</p> <ul style="list-style-type: none"> ◆ generation of electricity ◆ electrical power ◆ electromagnetism ◆ practical electrical and electronic systems ◆ gas laws and the kinetic model ◆ wave characteristics ◆ sound 	<p>At National 5, the Course is designed to allow some flexibility in the study of the key areas thus providing some personalisation and choice for learners.</p> <p>Much of the Course content will be familiar to centres currently delivering Physics at Intermediate 2 or at Standard Grade Credit level. However, the content has been reviewed and updated.</p> <p>The key areas for this Course are:</p> <ul style="list-style-type: none"> ◆ conservation of energy ◆ electrical charge carriers and electric fields ◆ potential difference ◆ practical electrical and electronic systems ◆ Ohm's law ◆ electrical power

	<ul style="list-style-type: none"> ◆ forces ◆ solar system 	<ul style="list-style-type: none"> ◆ electromagnetic spectrum ◆ nuclear radiation ◆ speed and acceleration ◆ relationships between forces, motion and energy ◆ satellites ◆ cosmology 	<ul style="list-style-type: none"> ◆ specific heat capacity ◆ gas laws and the kinetic model ◆ wave parameters and behaviours ◆ electromagnetic spectrum ◆ light ◆ nuclear radiation ◆ velocity and displacement ◆ velocity-time graphs ◆ acceleration ◆ Newton's laws ◆ projectile motion ◆ space exploration ◆ cosmology
<p>Added value/Course assessment</p>	<p>There is no Course assessment for National 3. To achieve the National 3 Course, learners must pass all of the required Units.</p> <ul style="list-style-type: none"> ◆ National 3, like Access 3, has no question paper. ◆ National 3 Courses are not graded. ◆ There is no Added Value Unit. 	<p>To achieve the National 4 Course, learners must pass all of the required Units, including the Added Value Unit.</p> <p>Unlike Standard Grade and Intermediate 1:</p> <ul style="list-style-type: none"> ◆ National 4 Courses are not graded. ◆ There is no question paper. ◆ There is an Added Value Unit which will be assessed through an Assignment. <p>The Added Value Assignment is a new method of assessment for this subject. It will be internally marked by centres in line with SQA guidelines, and externally quality-assured by SQA.</p> <ul style="list-style-type: none"> ◆ The Added Value Unit will allow learners to apply a range of skills, including: knowledge and understanding, research, interpreting evidence, and organising and presenting findings. 	<p>To achieve the National 5 Course, learners must pass all of the required Units and the Course assessment.</p> <p>The Course assessment will consist of two Components: an assignment and a question paper. Both will be externally assessed. Each Component will assess both skills and knowledge and understanding. The question paper will have a greater emphasis on knowledge and understanding while the assignment will have a greater emphasis on skills.</p> <p>Coursework: assignment</p> <p>The assignment will allow learners to apply a range of skills as they research a topic or issue, including: knowledge and understanding, research, interpreting evidence, organising and presenting findings.</p> <ul style="list-style-type: none"> ◆ Learners will have a high degree of choice in the topic or issue chosen for study.

		<ul style="list-style-type: none"> ◆ Learners will have a choice in the topic or issue chosen for study and will have a degree of flexibility in how they present their findings. ◆ SQA will provide advice and guidance on the degree of support that can be provided for learners, the conditions under which this Unit will be undertaken, and the nature and amount of evidence to be retained for verification purposes. 	<ul style="list-style-type: none"> ◆ SQA will provide advice and guidance on the degree of support that can be provided for learners and the conditions under which the assignment will be undertaken. <p>Question paper The question paper will sample the skills, knowledge and understanding from the Course. It will draw on styles of questions used in Standard Grade, Intermediate 2 and Revised Higher question papers.</p>
<p>Further information</p>	<p>The details above for National 3 should be read in conjunction with the relevant</p> <p>Mandatory documentation:</p> <ul style="list-style-type: none"> ◆ Course Specification ◆ Unit Specifications <p>Advice and guidance:</p> <ul style="list-style-type: none"> ◆ Course and Unit Support Notes <p>Assessment:</p> <ul style="list-style-type: none"> ◆ Unit Assessment Support materials: judging evidence table 	<p>The details above for National 4 should be read in conjunction with the relevant:</p> <p>Mandatory documentation:</p> <ul style="list-style-type: none"> ◆ Course Specification ◆ Unit Specifications ◆ Added Value Unit Specification <p>Advice and guidance:</p> <ul style="list-style-type: none"> ◆ Course and Unit Support Notes <p>Assessment:</p> <ul style="list-style-type: none"> ◆ Unit Assessment Support materials: judging evidence table ◆ Added Value Unit Assessment Support document: judging evidence table 	<p>The details above for National 5 should be read in conjunction with the relevant:</p> <p>Mandatory documentation:</p> <ul style="list-style-type: none"> ◆ Course Specification ◆ Unit Specifications ◆ Course Assessment Specification <p>Advice and guidance:</p> <ul style="list-style-type: none"> ◆ Course and Unit Support Notes <p>Assessment:</p> <ul style="list-style-type: none"> ◆ Unit Assessment Support materials: judging evidence table ◆ Coursework Component: <ul style="list-style-type: none"> — general assessment information on the Coursework: general marking principles — the Coursework assessment task: general marking principles, detailed marking instructions ◆ question paper: <ul style="list-style-type: none"> — specimen question paper — general marking principles, detailed marking instructions