Access to HE Diploma Guide

Science for Technology

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gateway qualifications

Access to Higher Education

learning your way

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About this Access to HE Diploma guide

This Access to HE Diploma specification is intended for Tutors, Assessors, Internal Quality Assurers, Quality Managers and other staff within Gateway Qualifications Access to HE approved providers/or prospective providers.

It sets out what is required of the student in order to achieve the Access to HE Diploma. It also contains information specific to managing and delivering the Access to HE Diploma (s) including specific quality assurance requirements.

The guide should be read in conjunction with the Gateway Qualifications Access to HE Provider Handbook and other publications available on the website which contain more detailed guidance on assessment and verification practice.

In order to offer this Access to HE Diploma you must be a Gateway Qualifications recognised centre and approved to offer Access to HE Diplomas.

If your centre is not yet recognised, or diploma approved, please contact our Development Team to discuss

Telephone: 01206 911211
Email: enquiries@gatewayqualifications.org.uk
Website: https://www.gatewayqualifications.org.uk/advice-guidance/delivering-our-qualifications/become-recognised-centre/

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1. Diploma Information

1.1 Overview of the Access to Higher Education Diploma

The Access to Higher Education (HE) Diploma is a nationally recognised qualification with common requirements relating to the description of student achievement. The Diploma is:

- a level 3 qualification, regulated by the Quality Assurance Agency (QAA) for Higher Education
- a unitised qualification, based on units of assessment which are structured in accordance with the Access to HE unit specification
- a credit-based qualification, operated in accordance with the terms of the Access to HE credit specification
- a graded qualification, as determined by the Access to HE Grading Scheme

Details of the credit framework and requirements relating to the award of credit are provided within the Quality Assurance Agency Recognition Scheme for Access to Higher Education: The Access to Higher Education Diploma specification 2013.

Individual named Diplomas are identified by separate titles and are validated at by Gateway Qualifications as an Access Validating Agency (AVA) recognised by the Quality Assurance Agency for Higher Education (QAA). Each Diploma has its own approved set of units of assessment, governed by rules of combination, which are appropriate to the subject of the particular Diploma. The common grading requirements apply to all individual Diplomas.

1.2 About this Diploma

The design of this programme has been drawn from existing successful Access to Science Diplomas and with consultation with HEI colleagues.

The current Gateway Qualifications Access to HE Science provision covers 10 differing science routes, all of which are different and diverse in approach. From analysis of the LEP priorities and HE science progression routes, it became clear that science is being prioritised along technology and bioscience routes. This proposed diploma will create a standardised approach to the Technology route.

HEI colleagues expressed the need for Science for Technology to be inclusive of chemistry and physics related academic content. In doing this the content straddles a range of physics and chemistry perspectives, including quantitative chemistry, organic chemistry, heat and energy, forces, nuclear physics. It is hoped that this focused science pathway will increase opportunity to enter focused science degree pathways. Historically this has been difficult in some areas with a very generalist science qualification.

This pathway also includes some higher maths.

1.3 Purpose

The primary purpose of Access to HE Diplomas is to provide higher education progression opportunities for adults who, because of social, education or individual circumstances, may have achieved few, if any, prior qualifications.

1.4 Aims

The qualification aims to:

- reintroduce learners to education recognising prior skills and experience and the particular needs of those returning to learn
- offer learners a responsive, supportive return to learn experience at a level appropriate for entry to HE
- develop the appropriate skills such as study skills that are necessary to enable learners to succeed in their HE career
- address issues of widening participation and social inclusion
- raise student awareness of the opportunities that a return to study and lifelong learning can bring.

1.5 Objectives

The objective of the Diploma is to enable learners to:

- satisfy the general academic requirements for entry to Higher Education
- prepare learners for HE level study generally and in subject areas appropriate to an intended HE course destination
- demonstrate appropriate levels of competence in subject specific skills and knowledge
- demonstrate practical, transferable and academic skills
- develop their confidence and ability to cope with a return to education at an advanced level
- enhance personal and career opportunities
- develop as independent and lifelong learners.

1.6 Sector Subject Area

2.1 Science

1.7 Target groups

Adults who, because of social, educational or individual circumstances may have achieved few, if any, prior qualifications and wish to progress to HE.
Students wishing to progress to a science / applied science degree pathway.

1.8 Delivery methods

Delivery methods for the Access to HE Diploma (Science for Technology) can include:

The delivery format will be left to the decision of the provider, with support from Gateway Qualifications

Assessment Methods should include:

The course will provide the student with a range of assessment methodology to support preparation to HE. This will include report and essay writing, giving presentations, literature researching, examinations, workbooks, portfolios, practical experiments etc. The assessment calendar will be available at the beginning of the academic year and students will be made aware of the hand in dates

1.9 Achievement methodology

The Diploma will be awarded to learners who successfully achieve an approved combination of units through a Portfolio of Evidence that has been successfully verified and monitored through Gateway Qualifications' Quality Assurance process.

The qualification is therefore determined by successful achievement of all required unit assessments with no further requirement for additional/terminal assessment.

1.10 Geographical Coverage

This qualification has been approved by for delivery in England.

1.11 Progression Opportunities

Following successful completion of the Access to HE Diploma () learners may progress to the following:

Engineering Science
Mechanical Engineering
Chemical Engineering
Aeronautical Engineering
Electrical Engineering
Civil Engineering
Sports Science
Paramedical Science
Forensic Science

The qualification does not provide guaranteed entry to UK higher education.

1.12 Equality, Diversity and Inclusion

It is Gateway Qualifications' aim that there shall be equal opportunities and so meet the organisation's legal responsibilities to prevent discrimination.

In accordance it is the organisation's intention that there should be no discrimination on the grounds of a protected characteristic including age, disability, gender assignment, marriage and civil partnership, pregnancy and maternity, race, religion and belief, sex, sexual orientation. It is acknowledged that this is not an exhaustive list.

2. Student Entry Requirements

2.1 Age

The course is designed to meet the needs of adults who have been out of full time education for a significant period of time and who have not achieved some or any formal qualifications. This generally would apply to learners over the age of 19.

2.2 Prior Qualifications

There is no requirement for learners to have achieved prior qualifications or units prior to undertaking this qualification.

Providers may ask learners for GCSEs as a mark of ability at Level 2 as an appropriate entry requirement to a Level 3 course. This also establishes HEI destination qualifications for Nursing, teaching etc. where these are required as part of the HEI application.

2.3 Prior Skills/Knowledge/Understanding

There is no requirement for learners to have prior skills, knowledge or understanding. However, learners would be expected to be able to demonstrate the skills and ability to study at Level 3.

2.4 Access to qualifications for learners with disabilities or specific needs

Gateway Qualifications and recognised providers have a responsibility to ensure that the process of assessment is robust and fair and allows the learner to show what they know and can do without compromising the rigour of the assessment used to evidence the criteria.

Gateway Qualification has a duty to permit a reasonable adjustment where an assessment arrangement would disadvantage a student with a disability, medical condition or learning need.

The following adaptations are examples of what may be considered for the purposes of facilitating access, as long as they do not impact on any competence standards being tested:

- adapting assessment materials
- adaptation of the physical environment for access purposes
- adaptation to equipment
- assessment material in an enlarged format or Braille
- permitting readers, signers, scribe, prompter, practical assistant
- changing or adapting the assessment method
- extra time, e.g. assignment extensions
- transcript

- use of assistive software where the software does not influence the learners' ability to demonstrate the skills, knowledge or understanding eg use of spellchecker in an English assessment
- using assistive technology
- use of CCTV, coloured overlays, low vision aids
- use of a different assessment location
- use of ICT/responses using electronic devices.

It is important to note that not all of the adjustments (as above) will be reasonable, permissible or practical in particular situations. The learner may not need, nor be allowed the same adjustment for all assessments.

Learners should be fully involved in any decisions about adjustments/adaptations. This will ensure that individual needs can be met, whilst still bearing in mind the specified assessment criteria for a particular qualification.

A reasonable adjustment for a particular learner may be unique to that individual and may not be included in the list of available access arrangements specified above.

Details on how to make adjustments for learners is set out in the Reasonable Adjustment and Special Considerations Policy and Procedures.

2.5 Additional Requirements/Guidance

Learners must have a UK address (including BFO) to be registered on an Access to HE Diploma.

2.6 Recruiting Learners with Integrity

It is vital that providers recruit with integrity. Providers must ensure that learners have the correct information and advice on their selected qualification(s) and that the qualification(s) will meet their needs.

The recruitment process must include the provider undertaking the assessment of each potential student and making justifiable and professional judgements about the student's potential to successfully complete the assessment and achieve the qualification. Such an assessment must identify, where appropriate, the support that will be made available to the learner to facilitate access to the qualification.

3. Achieving the Access to HE Diploma

3.1 Qualification Specification

The generic requirements for the Access to HE Diploma are that learners must achieve a total of 60 credits of which 45 credits must be achieved at level 3 from graded units that are concerned with academic subject and the remaining 15 credits can be achieved at level 2 or level 3 from units which are ungraded. It is recommended you include no more than 6 ungraded 'academic subject content' credits. The ungraded credits can be mandatory or optional within the Diploma. The approved Rules of Combination for this qualification are detailed below.

Where there is a selection of optional units within the permitted rules of combination, the selection of units to be used to form the Diploma course must be made before the learners are registered. Learners must be registered with Gateway Qualifications within 12 weeks of the start of the course or before application to UCAS, whichever is soonest.

3.2 Rules of Combination

The structure sets out the units required to be achieved the Access to Diploma, comprising of:

- Graded Academic mandatory units – Level 3
- Graded Academic optional units - Level 3
- Graded Research units - Level 3
- Ungraded units – Level 2/3.

Learners must achieve a total of 60 credits and meet unit group requirements.

Learners must complete at total of 60 credits of which 45 credits must be achieved at level 3 from graded units which are concerned with academic subject content and the remaining 15 credits must be achieved at level 3 from units which are ungraded.

Mandatory Units: Graded Academic Subject Content

Learners must achieve 39 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU006078	Application of Nuclear Physics	3	3	Academic	2, 4, 7	Exam	2 hours
QU006146	Chemical Basics and Atomic Structure	3	3	Academic	2, 3, 7	Workbook	1500 words
QU006301	Fundamental Chemistry	3	6	Academic	2, 3, 4, 7	Test, Presentation, Essay from case	1 hour 10 minutes 1200 words
QU006391	Heat, Electricity and Magnetism	3	3	Academic	2, 3, 7	Exam	2 hours
QU006603	Introduction to Organic Chemistry	3	3	Academic	2, 3,7	Short answer questions	1500 words
QU006675	Numerical Techniques for Science	3	3	Academic	3, 7	3 x controlled assessments	3 x 45 minutes
QU006759	Physics: Forces and Energy	3	3	Academic	2, 3, 7	Practical and report	1500 words
QU006785	Physics Fundamentals: Practical	3	3	Academic	3, 4, 7	Presentation, Report	10 minutes 1200 words
QU006797	Physics Fundamentals: Theory	3	3	Academic	3, 4, 7	Report	1500 words
QU006909	Quantitative Chemistry	3	3	Academic	2, 3, 7	Practical and report, Short answer questions	1500 words in total
QU007852	Trigonometry	3	6	Academic	3, 7	Portfolio of examples	3000 words

Optional Graded Units: Research

Learners must achieve 6 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU010142	Practical Scientific Project	3	6	Academic	1, 2, 3, 4, 5, 6, 7	Research proposal and report. Also, tutor observed practical activity and lab book as appendix	300 words 3000 words
QU018310	Research: Practical Investigation Report	3	6	Academic	2, 3, 4, 6, 7	Plan, Individual project, Report	300 words 3000 words
QU007933	Research Project – Methodology	3	6	Academic	2, 3, 4, 6, 7	Research proposal and report	300 words 3000 words

Units: Ungraded

Learners must achieve 15 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Suggested Assessment Methods	Assessment Volume
QU018346	Academic Reading Skills	3	3	Other	Exam	1.5 hour closed book
QU025276	Academic Writing Skills	3	3	Other	Notes from a range of sources essay plan essay	300 words 200 words 1000 words
QU007486	Application of Number – Interpreting and Presenting Information	3	3	Other	2 x controlled assessments	2 x 60 minutes
QU007560	Communication – Speaking and Listening	3	3	Other	Presentation, Preparation, Group Discussion	5 minutes 250 words 15-20 minutes
QU026150	Computer Data Protection	3	3	Other	Structured questions, Case study analysis	750 words 750 words
QU007580	Examination Skills	3	3	Other	2 x examinations, Revision timetable, Plan	2 x 2 hours 500 words
QU013859	Mathematics for Science	3	3	Other	Examination	1.5 hour open book
QU025280	Optimising Examination Performance	3	3	Other	Examination preparation, Examination, Reflective journal	500 words 1-2 hour 800 words
QU010772	Practical Science Skills	3	3	Other	Investigation, Report, Reflection	Practical 750 words 250 words
QU025532	Preparation for Higher Education	3	3	Other	Analysis, UCAS statement,	1500 words in total

Unit Code	Unit Title	Level	Credits	Content	Suggested Assessment Methods	Assessment Volume
					Preparing for interview questions	
QU027084	Presenting Information using ICT	3	3	Other	Research notes, Presentation handouts, Create presentation	1500 words in total
QU028487	Promoting Wellbeing and Building Resilience	3	3	Other	Report	1500 words
QU026344	References and Reliability of Sources	3	3	Other	Literature Review – including recognised form of referencing and bibliography	1500 words
QU007654	Self-Assessment and Personal Tutorial	3	6	Academic	SWAT analysis, Action plan linked to personal tutorials. Reflective account at midpoint and summative	300 words 800 2 x 1000 words.
QU011467	Spreadsheets	3	3	Other	Case study analysis, Spreadsheet Report	500 words 1000 words
QU026155	Writing Reports	3	3	Other	Report plan, Presentation of report plan, Report	Plan 2-3 minutes 1000 words

3.3 Additional completion requirements

Learners will probably require a pass in maths and English at Level 2 / GCSE to progress onto a degree course. Delivery providers should make learners aware of HEI course entry requirements.

3.4 Recognition of Prior Learning

Recognition of prior learning is a process that considers if a learner can meet the specified assessment requirements through knowledge, understanding or skills that they already possess and that can contribute towards the attainment of a qualification for which they are undertaking.

For further information please refer Annex C, Access to HE Diploma Specification, https://www.accesstohe.ac.uk/AboutUs/Publications/Documents/Access-Diploma-Specification.pdf

4. Access to HE Units of Assessment

4.1 Unit specification

A common unit specification applies to all units with Access to HE Diplomas the unit specification follows a standard template covering the following elements:

- title
- level
- credit value
- unit code
- learning outcomes
- assessment criteria
- grade descriptors
- type of unit (academic subject content or not).

The units of assessment for this Access to HE Diploma are contained within this Access to HE Diploma Guide.

4.2 Academic subject content

A unit is classified as having academic subject content, if the unit's knowledge and skills are directly related to the subject of the name of the Access to HE Diploma. Units will not meet the academic subject content requirement if they are principally concerned with personal development, generic English or mathematics, or study skills.

4.3 Graded and ungraded units

Graded units – grading operates at unit level and only applies to units which have been approved by Gateway Qualifications within a named Access to HE Diploma. Student achievement for graded units is recorded as Pass, Merit or Distinction for each unit, as set out in the QAA Access to HE Grading Scheme, 2012. Graded units will also satisfy the criteria of academic subject content.

There is a common set of broad generic grade descriptors which are used as the basis for all grading judgements on all courses:

1 Understanding the subject
2 Application of knowledge
3 Application of skills
4 Use of knowledge
5 Communication and presentation
6 Autonomy / Independence
7 Quality.

The seven grade descriptors are not subject specific. They can, however, through careful selection and in appropriate combinations, be used on all courses, with all units and for all

assignments. The descriptors to be used with a particular unit are selected with reference to the main aspects of student performance that need to be taken into account when grading decisions are made for that unit. They are formally assigned to the unit when it is validated.

Each of the seven grade descriptors comprises two sets of components, one which describes characteristics or qualities typical of performance at merit, and a parallel set of components which describes typical performance in the same areas at distinction. (There are no components for pass, because a pass grade is gained when a student meets the learning outcomes, but does not achieve the standard required for merit.) Some of these components are more relevant to certain subjects than others and some particular terms are also more relevant for use with particular types of assessment than others. In order to ensure the grade descriptors are relevant for specific assignments, tutors identify the components of the descriptors being used that are most relevant for the particular assignment. The selected components of the descriptors (at merit and distinction) are then included in the assignment brief(s).

The grading scheme is not based on an assumed one-to-one relationship between the grade descriptors and learning outcomes (although it is possible that in some units, because of the way the learning outcomes have been structured, something close to a one-to-one relationship may emerge). In general, however, judgements about student work in relation to grading apply across the work for a unit, whether that unit is assessed through one, or more than one, assignment.

The full Grade Descriptors can be accessed by the following link, which also provides detailed information on grading:

http://www.accesstohe.ac.uk/AboutUs/Publications/Documents/Access-Grading-Scheme-Section-B.pdf

4.4 Revisions to Access to HE Units of Assessment

Gateway Qualifications reserves the right to review and amend units of assessment and will issue providers notification of the changes to the units of assessment. Gateway Qualifications undertakes regular unit reviews to ensure currency of units, providers are required to use updated versions where units are replaced.

5. Assessment and Quality Assurance

5.1 Provider Requirements

Providers must be approved by Gateway Qualifications as a centre and are required to ensure that:

- the main base is in the UK
- systems are in place to ensure that only learners with a UK address (including BFO) are registered for an Access to HE Diploma
- there are clear arrangements for the day-to-day operational management and coordination of Access to HE delivery.
- there are appropriate facilities and resources at each site, and for each mode of delivery
- staff have the professional competence and skills to teach and assess necessary to teach and assess the units available on the Diploma
- arrangements are in place to provide pre-course guidance to applicants and criteria for selection and admission to Access to HE Diplomas, and are consistent with QAA requirements with respect to admissions. https://www.accesstohe.ac.uk/AboutUs/Publications/Documents/Guidance-admission-of-learners-AHE-07.pdf.
- expertise and resources to provide information, advice and guidance on HE applications and progression opportunities.
- Systems for maintaining secure records of individual learners' registration and achievement
- internal moderation arrangements that meet Gateway Qualification requirements.
- arrangements for internal course monitoring and self-evaluation and feedback
- procedures and criteria for the recognition of prior learning that meet Gateway Qualifications requirements.
- quality assurance procedures relating to the delivery of provision, including transparent processes for handling appeals and complaints.

Providers should refer to the Gateway Qualifications' Access to HE Provider Handbook for further information on centre requirements.

5.2 Staffing Requirements

Providers are required to ensure that:

- staff have the professional competence and skills to teach and assess necessary to teach and assess the units available on the Diploma
- staff have expertise to provide information, advice and guidance on HE applications and progression opportunities.

5.3 Facilities and Resources

The facilities and resources required for the delivery of this pathway include: classrooms, SMART boards, some access to laboratory work and experienced science teaching staff.

5.4 Assessment

Recommended assessment methods for each unit within a diploma are identified in section 3.2 Rules of Combination . To provide greater flexibility for Centres to develop an assessment strategy that meets the needs of their individual learners, Centres can select an alternative assessment method for the units(s) within the diploma using the equivalence guidance published on the website.

The guidance includes the expected assessment volume for different assessment methods and should enable Centres to choose alternatives whilst ensuring that the same rigor of assessment is maintained in comparison to any other three or six credit unit.

5.5 Quality Assurance Requirements

Gateway Qualifications applies a quality assurance model to the Access to HE Diploma of:

- internal assessment and internal verification by the provider
- moderation by Gateway Qualifications comprising of centre moderation and subject moderation.

These processes are set out within Quality Assurance section of the Gateway Qualifications' Access to HE Provider Handbook.

5.6 Additional Requirements/Guidance

There are no additional requirements that Learners must satisfy in order for assessment to be undertaken and the unit/qualification to be awarded.

6. Unit Details

Mandatory Units: Graded Academic Subject Content

Access to HE Diploma Unit

Unit Code:	QU006078		
Title:	Application of Nuclear Physics		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD4-Use of information • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand atomic structure.	1.1 Explain Rutherford model with approximate sizes. 1.2 Summarise the nature of protons, neutrons and electrons. 1.3 Explain the term Isotope.
2 Understand the variation in stability of atomic nuclei.	2.1 Summarise and use terms proton number and mass number.
3 Understand radioactive decay, radiations and sources.	3.1 Explain the nature of the a, β decay and the a, β, y radiations. 3.2 Evaluate biological effects of these radiations.
4 Understand applications of radiation to medicine.	4.1 Explain one medical application of radiation.

Access to HE Diploma Unit

Unit Code:	QU006146		
Title:	Chemical Basics and Atomic Structure		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand different types of substance.	1.1 Use the terms 'element' and 'compound' correctly in context.
2 Understand the particulate nature of matter.	2.1 Use the terms 'atom', 'molecule' and 'ion' correctly in context.
3 Understand and demonstrate the process of chemical change.	3.1 Recognise that chemical changes have occurred from observations and equations. 3.2 Use balanced equations to illustrate chemical change.
4 Know the structure of the nuclear atom.	4.1 Name the three subatomic particles and state their mass and charge. 4.2 Use 'mass number' and 'atomic' number to describe the numbers of particles in an atom. 4.3 Recognise the existence of isotopes. 4.4 Define and use the term 'Relative Atomic Mass'.
5 Be able to derive the electron configuration of atoms.	5.1 Derive the electron configurations in terms of s, p, d orbitals of atoms with atomic numbers 1 to 36.

Access to HE Diploma Unit

Unit Code:	QU006301		
Title:	Fundamental Chemistry		
Unit Level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD4-Use of information • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 6 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand chemical nomenclature both inorganic and organic.	1.1 Identify and explain chemicals from chemical formulae and structures.
2 Understand the techniques of chemical analysis.	2.1 Explain spectroscopy and chromatography in simple terms. 2.2 Explain different types of spectroscopy.
3 Understand how to balance chemical equations.	3.1 Explain chemical equations.
4 Understand basics of bonding.	4.1 Explain four main types of bonding and relate them to the position of the elements in the periodic table.
5 Understand how to use chemical equipment.	5.1 Explain a variety of equipment found in a chemistry lab. 5.2 Critically analyse the faults in an experiment and suggest ways of improvement.
6 Understand how to relate chemistry to own life.	6.1 Explain chemistry in everyday situations such as the home or body. 6.2 Explain examples of applications of chemistry in everyday life.

Access to HE Diploma Unit

Unit Code:	QU006391		
Title:	Heat, Electricity and Magnetism		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand heat transfer.	1.1 Explain the mechanisms of conduction, convection and radiation. 1.2 Differentiate between temperature and heat including references to specific heat capacity and latent heat. 1.3 Accurately solve problems involving heat transfer.
2 Understand the basic concepts of electricity.	2.1 Explain current, voltage and resistance in electric circuits. 2.2 Solve problems involving current voltage and resistance for a network of resistors. 2.3 Solve problems involving power in electric circuits. 2.4 Explain the differences between alternating current and direct current. 2.5 Describe the safety devices used in electric circuits.
3 Understand the concepts of magnetism and electro-magnetism.	3.1 Explain the properties of permanent magnets. 3.2 Explain how devices using electromagnets work.

Access to HE Diploma Unit

Unit Code:	QU006603		
Title:	Introduction to Organic Chemistry		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand the importance of carbon chemistry	1.1 Explain the tetravalent bonding of carbon and its ability to bond with itself and other elements.
2 Understand how to use the accepted conventions of representing organic compounds.	2.1 Draw structural formulae. 2.2 Identify and explain simple molecules using the IUPAC system. 2.3 Explain the types of isomerism (skeletal, positional geometric and optical).
3 Understand how to classify organic compounds in homologous series.	3.1 Define and explain homologous series and conduct associated experiments. 3.2 Recognise and explain general formulae of alkanes. 3.3 Identify and explain functional groups and investigate two examples experimentally.

Access to HE Diploma Unit

Unit Code:	QU006675		
Title:	Numerical Techniques for Science		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD3-Application of skills • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 6 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand how to use different number systems.	1.1 Use standard form, fractions and decimals in a range of situations. 1.2 Convert several examples of numbers from one form to another.
2 Understand how to state numbers to a suitable precision and accuracy.	2.1 Explain how to use significant figures and decimal places. 2.2 Determine greatest and least values of given measurements. 2.3 Calculate greatest and least values of simple expressions.
3 Understand how to use appropriate scientific units.	3.1 Use simple and compound S.I. units. 3.2 Analyse how to convert units to appropriate size using prefixes or multiplication factors. 3.3 Analyse how to convert units of area and volume. 3.4 Analyse how to convert compound units.
4 Understand how to use a scientific calculator.	4.1 Find estimates of a range of calculations. 4.2 Use a range of function keys. 4.3 Evaluate a range of formulae using a calculator. 4.4 Analyse how to calculate mean values.
5 Understand how to use ratio.	5.1 State and explain a ratio in its simplest form. 5.2 State and explain a ratio in the form of n:1.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
	5.3 Explain how to share quantities in a given ratio including increasing and decreasing ratios. 5.4 Analyse how to find simple concentrations and dilutions.
6 Understand how to use proportion.	6.1 Recognise and explain direct and inverse proportion. 6.2 Find a proportionality rule. 6.3 Write a proportionality formula. 6.4 Calculate a proportionality constant. 6.5 Solve a range of problems using proportion.

Access to HE Diploma Unit

Unit Code:	QU006759		
Title:	Physics: Forces and Energy		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand metric and S.I. units.	1.1 Define, use and convert metric and S.I. units. 1.2 Explain and use standard form notation. 1.3 Explain and use and convert temperature scales.
2 Understand the concepts of force and motion and relate these concepts to everyday situations.	2.1 Explain the terms distance, time, speed and velocity. 2.2 Carry out calculations involving distance, time, speed and velocity. 2.3 Explain and define the unit for force. 2.4 State, explain and use Newton's first, second and third laws of motion.
3 Understand gravitational force.	3.1 Explain gravitational force. 3.2 Explain the motion and behaviour of satellites and the solar system. 3.3 Explain Newton's laws of gravitation and the inverse square law.
4 Understand energy resources and energy transfer.	4.1 Explain the meaning of the terms energy and work and state their units showing how the units are derived. 4.2 Explain how energy if transferred from one system to another.
5 Understand the use of energy.	5.1 Calculate the efficiency of energy use. 5.2 Explain the implications of energy use for the environment e.g. global warming.

Access to HE Diploma Unit

Unit Code:	QU006785		
Title:	Physics Fundamentals: Practical		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD3-Application of skills • GD4-Use of information • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand how to plan a practical investigation with due regard to fair testing.	1.1 State and justify a testable hypothesis given a subject for a practical investigation. 1.2 Design an investigation in a series of logical steps. 1.3 As part of the design and where relevant, identify and analyse key variables to be controlled.
2 Understand safety procedures at all times.	2.1 Obey laboratory safety procedures. 2.2 Carry out a straight forward risk assessment. 2.3 Justify a risk assessment.
3 Understand how to implement a practical investigation.	3.1 Carry out an investigation by following appropriate instructions methodically and accurately. 3.2 Carry out an investigation by handling and organising a range of apparatus competently and safely. 3.3 Justify the choice of apparatus from a given range.
4 Understand how to make and record observations.	4.1 Take accurate measurements and readings of observations and present these in a range of appropriate formats. 4.2 Justify choice of geographical representation of data.

Access to HE Diploma Unit

Unit Code:	QU006797		
Title:	Physics Fundamentals: Theory		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD3-Application of skills • GD4-Use of information • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand forces in action.	1.1 Analyse the types of forces acting in described situations. 1.2 Find and justify the position of centre and gravity of a uniform body. 1.3 Analyse and identify key forces acting on the human body in a given situation.
2 Understand static and hydrostatic pressure.	2.1 Evaluate situations in which different combinations of forces and areas create different pressures. 2.2 Analyse the movement of gases in relation to atmosphere pressure. 2.3 Evaluate how pressure changes are accommodated by biological systems.
3 Understand Hooke's law in relation to stretching and compressing.	3.1 Evaluate data from stretching experiments. 3.2 Compare and contrast how two different materials behave under stress and strain in the human body.
4 Understand the action of levers.	4.1 Justify the Principle of Moments. 4.2 Calculate the forces/distance required to achieve equilibrium. 4.3 Explain the role of levers and joints in the achieving a vertical posture in humans.
5 Understand the concepts of current voltage and resistance.	5.1 Explain the relationship between current, voltage and resistance.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
	5.2 Calculate and explain the electrical resistance of various components. 5.3 Evaluate how one or more electrical concepts are put to use in a given medical device or procedure.

Access to HE Diploma Unit

Unit Code:	QU006909		
Title:	Quantitative Chemistry		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand quantitative experimental procedures.	1.1 Analyse the results of practical procedures involving the measurement of mass and volume.
2 Understand and apply the concepts of moles, masses and concentrations to chemical problems.	2.1 Interpret information to solve problems using formulae, equations, masses, moles and concentrations.
3 Understand energy changes during chemical reactions.	3.1 Apply the terms energy change, temperature change and enthalpy change to analyse practical observations about chemical reactions. 3.2 Calculate enthalpy for chemical reactions using practical observations. 3.3 Interpret chemical reactions using energy cycles and energy level diagrams.
4 Understand Hess's Law and enthalpy changes and use them to solve energetics problems.	4.1 Give a precise definition of enthalpy of combustion, formation and bond enthalpy. 4.2 Interpret problems using Hess's Law to calculate enthalpy change.

Access to HE Diploma Unit

Unit Code:	QU007852		
Title:	Trigonometry		
Unit Level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD3-Application of skills • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to apply trigonometric functions.	1.1 Perform calculations using the Pythagoras theorem. 1.2 Perform calculations on right-angled triangular shapes using sine, cosine and tangent. 1.3 Perform calculations involving angles of elevation. 1.4 Solve problems in three dimensions. 1.5 Solve problems using the Sine Rule. 1.6 Solve problems using the Cosine Rule.
2 Be able to tackle problems involving circular functions.	2.1 Calculate the length of an arc. 2.2 Calculate the area of a sector. 2.3 Solve problems involving radian measure.
3 Be able to prove trigonometric identities.	3.1 Using a right-angled triangle prove $\tan\theta = \sin\theta / \cos\theta$. 3.2 Prove $\cos^2\theta + \sin^2\theta = 1$. 3.3 Prove a given trigonometric identity.
4 Be able to solve trigonometric equations.	4.1 Calculate the general solution of a trigonometric equation. 4.2 Solve a trigonometric equation.

Graded Research Units

Access to HE Diploma Unit

Unit Code:	QU010142		
Title:	Practical Scientific Project		
Unit Level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD3-Application of skills • GD4-Use of information • GD5-Communication and presentation • GD6-Autonomy/Independence • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 7 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Know how to identify and define a practical scientific project.	1.1 Identify and justify a relevant scientific topic with reference to appropriate sources. 1.2 Produce a hypothesis and clear aims for the project.
2 Know how to plan and design a practical scientific project.	2.1 Develop a plan which addresses all relevant tasks including: (a) timescale/priority (b) acquisition of equipment and materials. 2.2 State anticipated method of data collection with regard for subsequent method of analysis. 2.3 Explain and justify planned methods with reference to controlled and uncontrolled variables, accuracy and reliability. 2.4 Link probable outcomes to relevant theories or previous work. 2.5 Identify any ethical, practical or safety issues and how these will be managed/overcome. 2.6 Carry out and record a risk assessment of the work.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
3 Be able to carry out and refine a practical scientific project.	3.1 Use planned and stated techniques to obtain results/data with regard for: (a) precision and accuracy (b) reliability. 3.2 Make modifications to plan as appropriate. 3.3 Record raw data appropriately for future processing. 3.4 Identify and record errors in equipment or method. 3.5 Work with due regard for health and safety.
4 Know how to process, represent and analyse data/results.	4.1 Process data/results using appropriate diagrammatic, tabular, graphical or statistical techniques to illustrate results. 4.2 Analyse results including reference to validity and reliability data.
5 Be able to consider evidence and reach appropriate conclusions.	5.1 Draw relevant conclusions from processed results, with reference to the original hypothesis or aim. 5.2 Use scientific knowledge, where appropriate to explain and clarify the conclusions.
6 Be able to evaluate own practical scientific project.	6.1 Evaluate strengths and limitations of design and procedure. 6.2 Suggest justified improvements and modifications to design and procedures.
7 Be able to present the practical scientific project in an appropriate style.	7.1 Produce the practical scientific project using correct scientific convention throughout. 7.2 Present the practical scientific project clearly and logically using correct scientific terminology. 7.3 Use appropriate scientific citation and referencing

Access to HE Diploma Unit

Unit Code:	QU018310		
Title:	Research: Practical Investigation Report		
Unit Level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD4-Use of information • GD6-Autonomy/Independence • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to plan a practical investigation project.	1.1 Identify and agree a practical investigation project, located within a knowledge domain relevant to the named Diploma. 1.2 Produce a hypothesis and clear aims for the investigation project. 1.3 Identify any ethical, practical or safety issues and how these will be managed/overcome. 1.4 Produce a risk assessment. 1.5 Maintain a record of project progress through all stages of research, development and completion.
2 Be able to undertake a practical investigation.	2.1 Carry out research from a wide range of sources. 2.2 Develop an appropriate investigation. 2.3 Identify the variables and explain how they can be controlled, where necessary. 2.4 Carry out the investigation safely, using appropriate practical skills and techniques. 2.5 Analyse the results of the investigation with reference to relevant theory.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
3 Know how to present the project.	3.1 Present the body of work in a style appropriate to the knowledge domain with clear conclusions. 3.2 Use appropriate technical terminology fluently. 3.3 Reference all findings using a recommended style of referencing.
4 Be able to evaluate own research project.	4.1 Reflect on the design and methodology of the project. 4.2 Evaluate the body of work in relation to aims and hypothesis. 4.3 Identify recommendations for the future.

Access to HE Diploma Unit

Unit Code:	QU007933		
Title:	Research Project - Methodology		
Unit Level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD3-Application of skills • GD4-Use of information • GD6-Autonomy/Independence • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1. Be able to plan a research project.	1.1 Identify and agree a research topic located within a knowledge domain relevant to the named diploma. 1.2 Produce and explain the aims of the research. 1.3 Develop, test, evaluate and refine appropriate research methodology. 1.4 Identify any ethical, practical or safety issues and how these will be managed/overcome.
2. Be able to conduct research.	2.1 Use a valid and appropriate method of investigation. 2.2 Identify and conduct detailed research from a wide range of sources. 2.3 Review research and relevant theory.
3. Be able to interpret research findings.	3.1 Interpret findings and draw appropriate conclusions.
4. Know how to present research findings.	4.1 Produce a research report. 4.2 Select and use the most appropriate format to present results. 4.3 Summarise information coherently in a conventional style, appropriate to the knowledge domain. 4.4 Reference all findings using a recommended style of referencing.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
5. Be able to evaluate own research project.	5.1 Reflect on the project design and methodologies. 5.2 Evaluate findings in relation to aims, previous research and relevant theory. 5.3 Identify recommendations for the future.

Units: Ungraded

Access to HE Diploma Unit

Unit Code:	QU018346		
Title:	Academic Reading Skills		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to demonstrate the use of different reading techniques.	1.1 Annotate text after using skimming, scanning and active reading techniques. 1.2 Summarise text after using skimming, scanning and active reading techniques.
2 Explain, with examples, how language used in texts can reveal assumptions and prejudice.	2.1 Identify and explain instances of opinion and bias in text. 2.2 Analyse the use of objective and emotive language in a text.
3 Demonstrate how to apply critical reading techniques to texts.	3.1 Analyse the strengths and weaknesses of an argument from at least two texts. 3.2 Critically evaluate an argument.

Access to HE Diploma Unit

Unit Code:	QU025276		
Title:	Academic Writing Skills		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to record information from a range of sources.	1.1 Use note-taking skills to prioritise key points from a range of sources.
2 Be able to plan and develop a structured framework for extended writing, including an introduction, main body and conclusion.	2.1 Develop a detailed essay plan for an extended piece of writing, which organises meaning and ideas coherently and effectively. 2.2 Include detailed planning for an introduction, main body and conclusion to the essay.
3 Be able to proofread and edit own writing effectively.	3.1 Produce an essay draft which shows evidence of proofreading and editing.
4 Be able to present information and opinion in a written format, using language, style and conventions appropriate to academic writing.	4.1 Communicate with clarity and detail to convey meaning and ideas effectively. 4.2 Write following conventions of sentence structure, punctuation, paragraphing, spelling and grammar. 4.3 Use appropriate style and register which shows an awareness of audience.
5 Be able to understand and use a standard form of referencing.	5.1 Use accurately a standard form of referencing that reflects a range of sources.

Access to HE Diploma Unit

Unit Code:	QU007486		
Title:	Application of Number – Interpreting and Presenting Information		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 2 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Know how to obtain and interpret mathematical and statistical information.	1.1 Within a complex task, identify and evaluate possible sources of data, e.g. rate of change, trends, probabilities. 1.2 Justify the choice of data collection procedures giving reasons for choosing a particular sample and methods used. 1.3 Evaluate actual or possible sources of error in collecting and recording data. 1.4 Choose and justify the chosen methods of recording data. 1.5 Interpret the main characteristics of the data in relation to the task.
2 Be able to present mathematical and statistical data.	2.1 Choose and use a range of appropriate and effective techniques to present accurately, e.g. the use of probability to describe situations, the presentation and interpretation of upper and lower boundaries of results; statistical diagrams. 2.2 Use correct axes, scales and conversions. 2.3 Justify choice and use of presentation techniques and methods for the original purpose of the task.

Access to HE Diploma Unit

Unit Code:	QU007560		
Title:	Communication – Speaking and Listening		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 2 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Give a short presentation about a straight forward subject.	1.1 Speak clearly using language, tone and style appropriately to the purpose, subject, audience and situation. 1.2 Present information in a structured sequence so that ideas and concepts are easily followed by the audience. 1.3 Use appropriate supporting material to illustrate presentation. 1.4 Respond appropriately and sensitively to questions from the audience.
2 Take part in discussions.	2.1 Give and obtain information and exchange ideas in discussion on both familiar and unfamiliar subjects. 2.2 Organise contributions to match the demands of the discussion, use vocabulary precisely, deal with sensitive issues appropriately and take account of the audience, subject, situation and purpose of the discussion and own role in it. 2.3 Take forward the discussion and create opportunities for others to contribute by asking follow up questions, listening to and interpreting other points of view sensitively or inviting others to contribute their views. 2.4 Respond appropriately to questions.

Access to HE Diploma Unit

Unit Code:	QU026150		
Title:	Computer Data Protection		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 2 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand current UK legislation relating to the use and protection of data.	1.1 Explain the purpose of legislation related to data protection. 1.2 Evaluate current legislation relating to the use and protection of data when using computers. 1.3 Analyse examples of the application of current data protection legislation.
2 Understand the need for control of data to ensure that it is accurate and secure.	2.1 Evaluate the need for control of data to ensure that it is accurate and secure. 2.2 Use examples to examine when data should or should not be controlled.

Access to HE Diploma Unit

Unit Code:	QU007580		
Title:	Examination Skills		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to plan revision in preparation for examinations.	1.1 Produce an effective and realistic revision plan. 1.2 Set priorities in his/her revision schedule. 1.3 Assess his/her progress and adjust the plan accordingly.
2 Be able to produce answers in time constrained conditions.	2.1 Follow all instructions accurately and complete the correct number and combination of questions. 2.2 Allocate sufficient time to individual questions.
3 Be able to demonstrate competence and/or knowledge in the subject.	3.1 Include the salient aspects in answers, with the accuracy and detail required by the subject. 3.2 Show in answers an in-depth understanding of the issues/arguments/problems, as required by the subject. 3.3 Apply knowledge or learning coherently in support of arguments and/or to resolve problems.
4 Be able to maintain a level of competence in language, processes and presentation as required by the subject.	4.1 Answer in an appropriate style demonstrating careful attention to: - Grammar, punctuation and spelling. - Vocabulary and specialised terminology. - Logical structure. - Presentation. - Processes used in the subject being examined.

Unit Code:	QU013859		
Title:	Mathematics for Science		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1. Understand how to perform calculations with integers, decimals and fractions.	1.1 Make calculations involving integers, decimals and fractions with or without a calculator. 1.2 Give answers to calculations correct to a specified number of decimal places or significant figures. Using accuracy appropriate to the nature of the data.
2. Understand how to perform calculations with percentages.	2.1 With and without a calculator, convert between percentages, decimals and fractions. 2.2 Express one quantity as a percentage of another. 2.3 Find a percentage of a quantity. 2.4 Calculate percentage increase and decrease; direct and inverse problems.
3. Understand how to use standard form, indices and roots.	3.1 Make conversions between ordinary numbers and standard form. 3.2 Use the exponential key and interpret calculator displays. 3.3 Make calculations involving indices and roots. 3.4 Apply index laws to simplify expressions involving powers and roots.
4. Understand how to evaluate formulae.	4.1 Evaluate formulae by substitution using the full range of functions on a scientific calculator.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
5. Understand how to calculate area and volume.	5.1 Calculate the surface area of plane geometric figures and the volume of complex geometric figures.

Access to HE Diploma Unit

Unit Code:	QU025280		
Title:	Optimising Examination Performance		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to effectively prepare for an examination.	1.1 Produce an effective and realistic preparation plan. 1.2 Identify priorities in the preparation plan. 1.3 Reflect on the plan's effectiveness to identify future improvements.
2 Be able to complete competent answers, which demonstrate subject knowledge.	2.1 Follow all instructions accurately to complete the correct number and combination of questions. 2.2 Include the salient aspects in answers, with the accuracy and detail required by the subject. 2.3 Show in answers an in-depth understanding of the issues / arguments/problems, as required by the subject. 2.4 Apply knowledge or learning coherently in support of arguments and/or to resolve problems.
3 Understand how to minimise common examination pitfalls.	3.1 Identify common pitfalls in examination performance. 3.2 Evaluate potential strategies to avoid examination pitfalls.
4 Know how to minimise stress to enhance examination performance.	4.1 Recognise own stressors. 4.2 Develop strategies to minimise own stressors.

Access to HE Diploma Unit

Unit Code:	QU010772		
Title:	Practical Science Skills		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to use a range of general laboratory equipment.	1.1 Demonstrate how to use equipment safely and effectively within a laboratory.
2 Be able to use specialised equipment in a laboratory.	2.1 Demonstrate how to carry out a scientific procedure with accuracy.
3 Know how to work with appropriate regard for safety.	3.1 Demonstrate how to carry out practical science work in a safe manner. 3.2 Assess the possible safety issues relating to a practical scientific procedure.
4 Understand how to report on scientific investigations.	4.1 Produce an experimental report with use of appropriate scientific terminology. 4.2 Identify a range of ways in which the work could be improved. 4.3 Evaluate the outcomes of the original objective, identifying further steps to be taken in the development of work.

Access to HE Diploma Unit

Unit Code:	QU025532		
Title:	Preparation for Higher Education		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid.		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand how to identify opportunities for Higher Education.	1.1 Use information sources to research Higher Education courses. 1.2 Analyse processes and procedures necessary to gain entry to Higher Education. 1.3 Analyse information on Higher Education courses and make appropriate realistic choices. This can also include Higher and Degree apprenticeships.
2 Understand the process of completing a Higher Education application form.	2.1 Complete an application form with excellent attention to detail, meeting a given deadline. 2.2 Summarise and evaluate personal experiences, achievement and goals, communicating these clearly in a personal statement.
3 Understand preparation required for the interview process.	3.1 Conduct further personal research into courses at relevant institutions in preparation for an interview. 3.2 Prepare provisional answers to anticipated questions, making excellent use of previous experience and recent study.
4 Understand the need to prepare for the transition to Higher Education.	4.1 Analyse the personal and academic qualities needed for successful study in Higher Education.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
	4.2 Explain likely practical problems and barriers in moving to higher education and seek strategies for overcoming these. 4.3 Analyse the nature of study in Higher Education.

Access to HE Diploma Unit

Unit Code:	QU027084		
Title:	Presenting Information Using ICT		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand ways of using ICT to present information.	1.1 Find and analyse examples of information presented through ICT. 1.2 Explain which forms of presentation suit different types of information. 1.3 Analyse examples of information presented with clear layout and style. 1.4 Explain the importance of copyright when presenting information.
2 Be able to use a range of ICT software applications to present information.	2.1 Present text information for a given purpose using a variety of features in word processing software. 2.2 Present information for a given purpose using a variety of features in spreadsheet software. 2.3 Present information for a given purpose using a variety of features in presentation software.
3 Be able to integrate ICT software to present information.	3.1 Plan how to present integrated information using a range of ICT formats. Range should include presentation, spreadsheet and word processing software. 3.2 Present information to meet a specific brief.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
	3.3 Save information in a structured format so it can be found easily and justify choice. E.g. embedding a chart produced in a spreadsheet into a document or presentation.

Access to HE Diploma Unit

Unit Code:	QU028487		
Title:	Promoting Wellbeing and Building Resilience		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1. Understand the physical and psychological impact of pressure and stress on mental wellbeing.	1.1 Explain the physical and psychological impact of pressure and stress on mental wellbeing.
2. Understand the connection between mental wellbeing and resilience.	2.1 Analyse the connection between mental wellbeing and resilience.
3. Understand the factors that can improve wellbeing and build resilience.	3.1 Explain factors that can improve wellbeing. 3.2 Explain factors that can negatively affect wellbeing and how to avoid them. 3.3 Explain the behaviours associated with resilience. 3.4 Explain ways to build resilience.
4. Understand how to manage an individual's mental wellbeing and the support available to them.	4.1 Evaluate the methods for managing and maintaining mental wellbeing and building resilience. To include practical and theoretical methods such as breathing exercises to reduce stress, mindfulness techniques. 4.2 Analyse the types of support available from different sources.

Access to HE Diploma Unit

Unit Code:	QU026344		
Title:	References and Reliability of Sources		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid.		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand the difference between primary and secondary sources.	1.1 Evaluate the difference between primary and secondary sources.
2 Understand the value of a variety of primary source materials as evidence.	2.1 Analyse primary sources for a specific context. 2.2 Evaluate the primary sources, taking into account: authorship, purpose, audience, and underlying values and beliefs.
3 Understand the uses and limitations of secondary sources.	3.1 Compare and evaluate secondary sources considering the following: use of sources, 'facts', background material, interpretation.

Access to HE Diploma Unit

Unit Code:	QU007654		
Title:	Self Assessment and Personal Tutorial		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid.		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to assess own strengths and weaknesses as a learner.	1.1 Identify and describe the skills and qualities developed through existing experiences that facilitate the learning process. 1.2 Identify and describe skills and qualities that require significant development. 1.3 Reflect on and use tutor feedback to inform ongoing skills development. 1.4 Set realistic targets for skills development and identify the action necessary for their development.
2 Be able to develop strategies to study successfully in the context of their personal circumstances.	2.1 Identify and describe specific problems if/when they occur. 2.2 Identify and use relevant sources of advice, guidance and information if/when needed with little prompting.
3 Be able to monitor and record own achievement and progress.	3.1 Analyse formative and summative evidence of achievement. 3.2 Keep a portfolio of all evidence of achievement and complete associated recording documentation as required.

Access to HE Diploma Unit

Unit Code:	QU011467		
Title:	Spreadsheets		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid.		

This unit has 7 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Know how to design and store a spreadsheet.	1.1 Design a spreadsheet appropriate to a user's requirements. 1.2 Create and store the spreadsheet. 1.3 Evaluate the spreadsheet in terms of meeting the user's needs.
2 Be able to retrieve and modify an existing spreadsheet.	2.1 Modify the spreadsheet design/content in response to user feedback.
3 Know how to print a spreadsheet.	3.1 Print or display whole or part spreadsheets/formulae with a variety of print layout options.
4 Be able to enhance user readability.	4.1 Use suitable formatting options for displaying text and numeric values. 4.2 Define and use conditional formatting to limit input error and give suitable messages to users.
5 Understand spreadsheet functions.	5.1 Develop a spreadsheet solution using a range of mathematical functions.
6 Understand graphical facilities.	6.1 Use an appropriate graph type. 6.2 Draw pie, bar, line graphs with appropriate labels attached.
7 Know how to use additional features within the spreadsheet environment.	7.1 Use advanced sorting, protecting and filtering facilities on a spreadsheet.

	7.2 Analyse data using pivot tables.

Access to HE Diploma Unit

Unit Code:	QU026155		
Title:	Writing Reports		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Refer to assessment grid.		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Understand the significance of the report title in determining the content.	1.1 Analyse the requirements of the question or task. 1.2 Analyse the main points which must be covered, omitting irrelevant detail.
2 Be able to plan and present the plan for a report	2.1 Produce a plan for a report. 2.2 Present the plan for the report.
3 Be able to structure a report.	3.1 Produce an introduction which sets out how the subject will be dealt with in the report. 3.2 Use evidence and examples to strengthen information provided in the report. 3.3 Use linking sentences in paragraphs to produce a cohesive report. 3.4 Provide a conclusion which sums up the main findings of the report.
4 Be able to write in an appropriate style.	4.1 Write in a detached, balanced, and objective manner. 4.2 Write formal English avoiding emotive language and colloquialisms.
5 Know the conventions for acknowledging sources.	5.1 Acknowledge the work of other authors both during the report and in a list of references. 5.2 Use recognised approaches for acknowledging sources.

7. What to do next

For existing Centres please contact your named Development Manager or Development Officer.

For organisations, not yet registered as a Gateway Qualifications Centre please contact:

Gateway Qualifications
Gateway House
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Colchester
CO3 8AB

Tel: 01206 911211

Email: enquiries@gatewayqualifications.org.uk

8. Gateway Qualifications

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