DIPLOMA GUIDE

Access to Higher Education

gateway qualifications

Qualification No: QAAQ002496
Aim Code: 40008423
Validation: 1 August 2018 – 31 July 2024
Version: 5.0

Access to HE

Apprenticeships

Digital

Employability & Enterprise

English & Maths

ESOL

Personal & Social Development

Professional Development

Vocational

Access to HE Diploma (Science)

This page has been left intentionally blank.

About this Access to HE Diploma guide

This Access to 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/

Contents

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 Diploma covers all three sciences and learners will have the opportunity to study all three subjects equally to give a balanced view of skills to enable progression to science based degree programmes. The mandatory group ensures that learners have the fundamental understanding of biology, chemistry and physics and then learners can select from a range of optional units. All learners must also complete a mathematics unit chosen to underpin skills required to progress further.

Learners must choose from a selection of mandatory and optional ungraded units to support underpinning skills.

The units include a balance of science units which allow the learners to keep their options open until they have fully decided on their preferred route at degree level. The ungraded units have been chosen to support both progression into higher education and also to allow the learners to develop skills relevant to the subject area e.g. practical science skills and problem solving.

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 students to education recognising prior skills and experience and the particular needs of those returning to learn
- offer students 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 students 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 students to:

- satisfy the general academic requirements for entry to Higher Education
- prepare students 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
- Adults who have gone straight into industry (perhaps following apprenticeship routes) who wish to progress to HE.

Learners who have followed these routes may need to refresh/develop skills in specific areas as well as learning more about subjects in which they have an interest. If the learner has gone straight into employment, they may not have studied at Level 3 and so this Access Diploma will help them to build on existing scientific skills and provide a good grounding for further academic study.

1.8 Delivery methods

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

- Face to face
- Blended learning
- Work placements would also be beneficial and access to laboratories will be required to produce the evidence for some of the more practical based units.

It is recommended that the Introduction to Organic Chemistry and Further Organic Chemistry are delivered together. The Further Organic Chemistry unit should not be delivered unless the introductory unit has been delivered.

Assessment Methods should include:

Written questions and answer, scientific reports, investigations, exam, risk assessment, projects, worksheets, case studies, annotated diagram, presentation, poster.

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 (Science) learners may progress to the following:

- Biological Sciences BSc (Hons)
- Healthcare Science (Life Sciences) BSc (Hons)
- Biology BSc (Hons)
- Molecular Biology BSc (Hons)
- Bioscience BSc (Hons)
- Chemistry BSc (Hons)
- Natural Sciences BSc (Hons)
- Applied Physics BSc (Hons)
- Physics BSc (Hons)
- BSc (Hons) Forensic Science

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

Learners will probably require a pass in a science subject alongside maths and English at GCSE level to progress onto a degree course.

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.

Learners will probably require a pass in a science subject alongside maths and English at GCSE level to progress onto a degree course.

2.3 Prior skills/knowledge/understanding

There is no requirement for learners to have prior skills, knowledge or understanding. However, students 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 students' ability to demonstrate the skills, knowledge or understanding e.g. 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

Students 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 students 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 students are registered. Students 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 18 Credits from the Mandatory Graded Units group, 6 Credits from the Optional Graded Units: Research group, 6 credits from each of the Optional Graded Units: Chemistry group, Biology group, Physics group and 3 credits from the Mathematics group. Learners must complete 9 credits from the Mandatory ungraded group and 6 credits from the Optional Ungraded group.

Mandatory Units: Graded Academic Subject Content

Learners must achieve 18 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU006301	Fundamental Chemistry	3	6	Academic	2,3,4,7	Investigation with report Exam	1500 words 1.5 hours open book
QU025282	Fundamental Physics: Theory	3	6	Academic	1, 7	Written question and answer 2 x scientific reports, practical investigations	1000 words 2 x 750 words
QU006413	Human Anatomy and Physiology	3	6	Academic	2, 3, 7	Exam 3 x academic posters	1.5 hours open book 3 x 500 words

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
QU026081	Research: Extended Writing Project for Science	3	6	Academic	1, 2, 3, 4, 7	Practical investigations, scientific report including at least one graph, chart and table, worksheets	1250 word scientific report based on investigations, including at least one graph, chart and table, 750 words
QU026078	Research: Practical Investigation Project for Science	3	6	Academic	2, 3, 4, 6, 7	Risk assessment Project diary Project proposal Research review	250 words 500 words 250 words 500 words

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
						Report Evaluation	1250 words 250 words

Optional Graded Units: Biology

Learners must achieve 6 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU018205	An Introduction to Health and Disease	3	3	Academic	2,7	Case study Short answer questions Individual presentation	750 words 250 words 10 minutes
QU025366	Cells and Tissues	3	3	Academic	1,3,7	Practical Investigation Report to provide evidence of the microscope work	1500 words
QU006178	Circulation, Immunity and Homeostasis	3	3	Academic	2, 7	Exam	1.5 hours open book
QU025851	Ecosystems and Human Influences	3	6	Academic	1, 2,7	Exam Case study Academic poster Experiments and scientific report	1.0 hour closed book 500 words 500 words 750 words
QU006307	Fundamental Concepts and Scientific Method in Biology	3	6	Academic	1, 2, 3, 4, 7	Practical investigations, scientific report including at least one graph, chart and table, worksheets	1250 word scientific report based on investigations, including at least one graph, chart and table, 750 words

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU018998	Human Cardiac and Respiratory Systems	3	3	Academic	1, 2, 7	Worksheets	1500 words
QU006477	Human Systems - Reproduction, Growth and Development	3	6	Academic	1, 2, 7	Essay Annotated poster Table Individual presentation	1500 words 500 words 500 words 10 minutes
QU019880	Plant and Soil Science	3	6	Academic	1, 2, 7	Exam Investigation Report	1.5 hours closed book Investigations 1000 words
QU024478	Sustainability and Waste Management	3	3	Academic	1, 2, 7	Open book timed assessment	1.5 hours
QU014056	The Blood	3	3	Academic	1, 2, 7	Investigation Presentation Supporting materials	Investigation 15 mins 500 words
QU017109	The Endocrine System	3	3	Academic	1, 2, 7	Worksheets Individual presentation Self evaluation	750 words 10 minutes 250 words

Optional Graded Units: Chemistry

Learners must achieve 6 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU006146	Chemical Basics and Atomic Structure	3	3	Academic	2, 3, 7	Exam	2 hours closed book
QU025703	Chemical Principles: Particles and Forces	3	6	Academic	2, 3, 7	Exam Practical investigation Report Annotated diagram	1 hour closed book Investigation 1000 words 500 words

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU007822	Further Organic Chemistry	3	6	Academic	2, 3, 7	Practical investigations 2 x report Worksheets	1000 words 1000 words 250 words
QU006603	Introduction to Organic Chemistry	3	3	Academic	2, 3, 7	Investigation with scientific report Worksheets	1000 words 250 words
QU019014	Practical Chemical Analysis	3	3	Academic	1, 2, 7	Investigation, scientific report	Practical investigation, 1000 words

Optional Graded Units: Physics

Learners must complete 6 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	1.5 hours open book
QU006259	Energetics, Kinetics, Equilibria	3	3	Academic	2, 3, 7	Worksheets	1500 words
QU025284	Fundamental Physics: Practical Investigation	3	6	Academic	3, 5, 7	Practical investigation Report	Practical investigation 1500 words
QU006383	Health Physics	3	6	Academic	2, 3, 7	Experiments Scientific report Case study	1500 words 750 words
QU025706	Physical Science: Environmental Health and Medical Physics	3	3	Academic	1, 2, 7	Individual presentation Supporting materials Short answer questions	10 minutes 500 words 500 words
QU026260	Physics: Medical Applications for Radiography	3	3	Academic	2, 3, 7	Exam 1 x Academic Posters Individual Presentation	1.5 hours closed book 500 words x 2 10 minutes

Optional Graded Units: Mathematics

Learners must complete 3 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Grade Descriptors	Suggested Assessment Methods	Assessment Volume
QU006176	Mathematics for Science	3	3	Academic	3, 7	Exam	2 hours closed book
QU007424	Mathematics: Algebra, Exponentials and Logarithms	3	3	Academic	3, 5, 7	Worksheets	1500 words
QU007442	Quantitative Methods - Statistics	3	3	Academic	3, 4, 5, 7	Data analysis short answer questions, create charts and graphs Worksheets Case study analysis of data Tree diagrams	500 words, 500 words 250 words Tree diagrams 250 words

Mandatory Units: Ungraded

Learners must achieve 9 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Suggested Assessment Methods	Assessment Volume
QU025276	Academic Writing Skills	3	3	Other	Notes from a range of sources Essay plan Essay	300 words 200 words 1000 words
QU025532	Preparation for Higher Education	3	3	Other	Analysis, UCAS Statement, Preparing for interview questions, Chart	1,500 words in total
QU018318	Study Skills	3	3	Other	Study Plan, Worksheets, Assignment Plan	200 words 250 words 500 words

Optional Units: Ungraded

Learners must achieve 6 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Suggested Assessment Methods	Assessment Volume
QU018346	Academic Reading Skills	3	3	Other	Examination	1.5 hour closed book examination
QU007486	Application of Number - Interpreting and Presenting Information	3	3	Other	2x Controlled Assessments	2x 60 minutes
QU007560	Communication - Speaking and Listening	3	3	Other	Presentation, Preparation, Group Discussion	Presentation: 5 minutes 250 word notes Discussion: 15-20 minutes
QU013859	Mathematics for Science	3	3	Other	Examination	1.5 hour open book examination

Unit Code	Unit Title	Level	Credits	Content	Suggested Assessment Methods	Assessment Volume
QU025280	Optimising Examination Performance	3	3	Other	Examination Preparation, Examination, Reflective Journal	500 words 1-2 hour examination 800 words
QU010772	Practical Science Skills	3	3	Other	Investigation Report and reflection	Practical investigation with 750 word report and 250 word reflection
QU018352	Presentation Skills	3	3	Other	Presentation, Answer Questions, Self Evaluation	5 minute presentation 5 minutes answering questions N/A
QU027084	Presenting Information Using ICT	3	3	Other	Research Notes, Presentation Handouts, Create Presentation	1,500 words in total
QU028487	Promoting Wellbeing and Building Resilience	3	3	Other	Report	1,500 words
QU011467	Spreadsheets	3	3	Other	Case Study Analysis, Spreadsheet and Report	500 words 1,000 words
QU033854	Sustainability Project	3	3	Academic	Report, including project plan and reflection	1000 words
QU033880	The Fundamentals of Environmental Sustainability	3	3	Academic	Report	1500 words
QU026155	Writing Reports	3	3	Other	Report Plan, Presentation of Report Plan, Report	Plan 2-3 minutes 1000 words
QU025609	Work Placement	3	3	Other	Evaluation of Work Placement, Evaluation of Structure, Evaluation of Work Experience	1,500 words in total

3.3 Additional completion requirements

Learners will probably require a pass in biology/science subject alongside maths and English at GCSE level 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 Qualifications as centre and are required to ensure that:

- the main base is in the UK
- systems are in place to ensure that only students 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-students-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 students' 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 use of laboratory facilities is required for the delivery and provider approval of the Access to HE Diploma

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:	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 **The learner will:**	ASSESSMENT CRITERIA **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.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	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:	QU025282		
Title:	Fundamental Physics: Theory		
Unit level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Written question and answer ~ 1000 words 2 x 750 word scientific reports, practical investigations		

This unit has 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand forces in action.	1.1 Explain the types of forces acting in given situations. 1.2 Find the position of centre and gravity of a uniform body, justifying the answer. 1.3 Explain key forces acting on the human body in a given situation.
2 Understand static and hydrostatic pressure.	2.1 Explain 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 Explain how pressure changes are accommodated by biological systems.
3 Understand Hooke's law in relation to stretching and compressing.	3.1 Summarise Hooke's law in relation to stretching and compressing. 3.2 Evaluate data from stretching experiments. 3.3 Compare and contrast how two different materials behave under stress and strain in the human body.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
4 Understand the action of levers.	4.1 Explain the Principle of Moments. 4.2 Calculate the forces/distance required to achieve equilibrium. 4.3 Explain the role of levers and joints in 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. 5.2 Calculate the electrical resistance of various components. 5.3 Evaluate how electrical concepts are put to use in a given medical device or procedure.

Access to HE Diploma Unit

Unit Code:	QU006413		
Title:	Human Anatomy and Physiology		
Unit level:	Level 3	**Unit Credit:**	6
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 6 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the structure of the heart and circulatory system.	1.1 Compare the main components of the blood. 1.2 Analyse and determine the basic anatomy of the heart. 1.3 Explain the anatomy of arteries, veins and capillaries. 1.4 Explain the circulatory system with reference to the main blood vessels.
2 Understand the functioning of the digestive system	2.1 Analyse the gross anatomy of the digestive system. 2.2 Define, explain and differentiate the overall function of each region. 2.3 Analyse the different types of enzymes found in the digestive system. 2.4 Investigate and analyse one example of enzyme action experimentally.
3 Understand the structure and functioning of the skeleton.	3.1 Identify and analyse the main regions of the skeleton - axial appendicular ribcage, girdles and limbs (only a few common bone names should be introduced)

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	3.2 Describe, differentiate and analyse the nature of position of the various joints. 3.3 Discuss and evaluate the movement brought about at joints e.g. forearm.
4 Understand the gross structure of the male and female reproductive system.	4.1 Contrast and explain the main regions of the male and female reproductive system. 4.2 Analyse the function of each region identified.
5 Understand the structure and function of the respiratory system.	5.1 Describe the gross and microscopic structure of the respiratory system. 5.2 Describe breathing in terms of changes in volume and pressure. 5.3 Identify the adaptations of the gas exchange surface.
6 Understand the role of the kidney in excretion.	6.1 Describe the process involved in the formation of urine in the kidney. 6.2 Explain the role of ADH in the process of osmoregulation.

Optional Graded Units: Research

Access to HE Diploma Unit

Unit Code:	QU026081		
Title:	Research: Extended Writing Project for Science		
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:	Practical investigations ~ 1250 word scientific report based on investigations, including at least one graph, chart and table Worksheets ~ 750 words		

This unit has 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Be able to plan an extended writing project.	1.1 Identify and agree an extended writing project located within a knowledge domain relevant to the named Diploma. 1.2 Develop a project brief. 1.3 Identify any ethical, practical or safety issues, explaining how these will be managed/overcome. 1.4 Maintain a record of project progress through all stages of research, development and completion.
2 Be able to conduct research.	2.1 Identify and conduct in-depth research from a wide range of sources.
3 Be able to develop ideas.	3.1 Select appropriate information and/or evidence.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	3.2 Analyse findings and develop ideas. 3.3 Produce a body of work which meets the brief and includes complex ideas.
4 Be able to present the project.	4.1 Write coherently in a conventional style, appropriate to the knowledge domain. 4.2 Reference all sources using a recommended style of referencing.
5 Be able to evaluate own writing project.	5.1 Evaluate own writing in relation to project brief. 5.2 Identify recommendations for the future.

Access to HE Diploma Unit

Unit Code:	QU026078		
Title:	Research: Practical Investigation Project for Science		
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 • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Risk assessment ~ 250 words Project diary ~ 500 words Project proposal ~ 250 words Research review ~ 500 words Report ~ 1250 words Evaluation ~ 250 words		

This unit has 4 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **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.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	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.
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.

Optional Graded Units: Biology

Access to HE Diploma Unit

Unit Code:	QU018205		
Title:	An Introduction to Health and Disease		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand different concepts of health.	1.1 Explain different definitions of health.
2 Understand the causes of disease	2.1 Summarise the difference between communicable and non-communicable diseases. 2.2 Explain some biological causes of non-communicable diseases.
3 Understand the causes of health care associated infections.	3.1 Explain how and why healthcare associated infections such as MRSA and Clostridium Difficile occur.
4. Understand how healthcare associated infections are prevented and controlled.	4.1 Analyse the infection control measures which should be followed in cases of healthcare associated infections.

Access to HE Diploma Unit

Unit Code:	QU025366		
Title:	Cells and Tissues		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • 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 **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Be able to use and care for a light microscope.	1.1 Use a light microscope to produce a non-permanent microscope slide, explaining how this is done in accordance with good practice. 1.2 Identify cell components and structures in a named tissue as seen under a light microscope. 1.3 Show on a scale drawing the sizes of three organelles (in micrometres).
2 Understand the structure and function of cell components as seen in electron micrographs.	2.1 Describe the main cell organelles. 2.2 Explain the function of each of the main organelles.
3 Understand the methods of exchange between the cell and its environment.	3.1 Explain the function of the plasma membranes. 3.2 Explain the main methods of transport across a plasma membrane.
4 Understand the structure and function of human epithelial, muscle, connective and nerve tissue.	4.1 Explain what is meant by a tissue. 4.2 Describe the structural characteristics of the main tissue types.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	4.3 Explain the general functions of the main tissue types.

Access to HE Diploma Unit

Unit Code:	QU006178		
Title:	Circulation, Immunity and Homeostasis		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the different types of tissues within the human body.	1.1 Differentiate between epithelial, connective, muscle and nervous tissue and relate their structure to function.
2 Understand how the human circulatory system functions and how it may be affected by degenerative conditions.	2.1 Explain how the structure of blood, the heart and blood vessels relates to their function in transport and metabolic exchange. 2.2 Explain risk factors associated with coronary heart disease.
3 Understand how the human immune system functions.	3.1 Explain how the major components of the immune system function and their significance in the immune response. 3.2 Explain the differences between passive, active and acquired immunity.
4 Understand the concept of homeostasis within the human body.	4.1 Explain what homeostasis entails and explain how it is achieved with reference to suitable homeostatic mechanisms of the body.

Access to HE Diploma Unit

Unit Code:	QU025851		
Title:	Ecosystems and Human Influences		
Unit level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Exam ~ 1 hr closed book Case study ~ 500 words Academic poster ~ 500 words Experiments and scientific report ~ 750 words		

This unit has 4 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the structure of ecosystems.	1.1 Explain the components of ecosystems. 1.2 Discuss how abiotic factors affect distribution of species. 1.3 Analyse inter-relationships between species.
2 Understand the flow of energy in ecosystems.	2.1 Explain food chains and food webs. 2.2 Analyse the flow of energy through a food chain. It is important that assessment tasks allow genuine ANALYSIS of energy flow, e.g. using examples of energy values 2.3 Explain photosynthesis as a cellular process which introduces energy and food chains.
3 Know some of the influences of humans on ecosystems.	3.1 Discuss causes and effects of global warming. 3.2 Discuss causes and effects of loss of biodiversity. 3.3 Discuss one other human influence on ecosystems.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
4 Know how to carry out ecological sampling and understand conservation techniques.	4.1 Analyse sample data from a habitat to explain distribution of species. 4.2 Compare conservation techniques used in more than one habitat. 4.3 Explain two ecological sampling techniques.

Access to HE Diploma Unit

Unit Code:	QU006307		
Title:	Fundamental Concepts and Scientific Method in Biology		
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 • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 6 learning outcomes.

LEARNING OUTCOMES **The learner will:**	**ASSESSMENT CRITERIA** **The learner can:**
1 Understand scientific terminology.	1.1 Explain appropriate scientific terminology accurately.
2 Understand a range of biological processes.	2.1 Explain diffusion and osmosis with reference to a range of examples. 2.2 Analyse the importance of surface area to volume ratio in biology using appropriate examples. 2.3 Explain the concept of negative feedback in biology using two examples.
3 Understand the concept of units and scales in biology.	3.1 Differentiate the scale of measurement in various biological structures. 3.2 Measure, reform and calculate magnifications and sizes from diagrams and micrographs. 3.3 Diagnose various units of measurement and express them in different ways.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
4 Know how to tabulate plot and interpret data.	4.1 Apply data in fully labelled tables manually and using basic excel functions. 4.2 Develop graphs from tabulated data both manually and using excel. 4.3 Calculate and explain the importance of rates of change.
5 Understand scientific reporting.	5.1 Demonstrate how to record methods and results clearly. 5.2 Interpret and explain results. 5.3 Evaluate work (discuss limitations of method, suggest improvements and further experiments).
6 Be able to use a range of apparatus in biological investigations.	6.1 Prepare specimens for and use a light microscope on high power to produce accurate scaled drawings. 6.2 Demonstrate use of specialised apparatus competently to gain comprehensive data in an experiment. 6.3 Demonstrate use of common lab apparatus safely and competently in a range of situations.

Access to HE Diploma Unit

Unit Code:	QU018998		
Title:	Human Cardiac and Respiratory Systems		
Unit level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Worksheets ~1500 words		

This unit has 3 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the structure and function of the respiratory system.	1.1 Explain the structure of the respiratory system, relating this to the process of ventilation. 1.2 Evaluate the conditions required for effective gaseous exchange. 1.3 Explain the role of the nervous system in generating normal breathing rhythm.
2 Understand the structure and transport function of blood.	2.1 Explain the constituents of plasma, including their functions. 2.2 Explain the structure of a red blood cell, including how this relates to its function. 2.3 Explain how oxygen and carbon dioxide are transported by the blood.
3 Understand blood circulation in the human body.	3.1 Explain the structure of arteries, veins, arterioles and capillaries, relating this to their functions. 3.2 Explain the structure of the heart in relation to its function. 3.3 Explain the cardiac cycle, including the electrical activity of the heart during a heartbeat.

Access to HE Diploma Unit

Unit Code:	QU006477		
Title:	Human Systems - Reproduction, Growth and Development		
Unit level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the male and female reproductive systems, fertilisation and birth.	1.1 Explain and discuss the structures and functions of the male and female reproductive systems. 1.2 Explain in detail the female menstrual cycle. 1.3 Explain fertilisation and implantation. 1.4 Explain in detail the stages of pregnancy and the process of birth.
2 Understand growth and development in the human body.	2.1 Explain in detail the growth and development of the human being from babyhood to adulthood. 2.2 Discuss the process of ageing and its effects on the human body.
3 Understand inheritance and variation in human beings.	3.1 Explain and discuss the structure and functions of chromosomes and genes. 3.2 Explain cell division, mitosis and meiosis. 3.3 Explain in detail the work of Mendel and his laws of inheritance. 3.4 Explain in detail genetic predicting using relevant examples.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
	3.5 Explain in detail variation and mutation in humans using relevant examples.
	3.6 Explain and discuss two genetic diseases, their genetic causes, the symptoms and treatment.

Access to HE Diploma Unit

Unit Code:	QU019880		
Title:	Plant and Soil Science		
Unit level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand plant structures and physiology.	1.1 Explain the function of plant structures. 1.2 Explain the process of photosynthesis. 1.3 Analyse the factors that can affect photosynthesis. 1.4 Explain the principles of plant respiration. 1.5 Analyse the processes involved in the uptake, movement and loss of water within a plant.
2. Understand plant growth and development.	2.1 Explain a plant life cycle. 2.2 Evaluate nutrients required by the plant and the symptoms of nutrient deficiency in the plant.
3 Understand the principles of soil science.	3.1 Explain soil types and their constituents. 3.2 Analyse soil pH. 3.3 Explain the effects of soil structure on plants, explaining the impact of cultivation.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
4 Know ways in which people can influence plant and soil processes.	4.1 Analyse how plant communities and soil formation are affected by people.

Access to HE Diploma Unit

Unit Code:	QU024478		
Title:	Sustainability and Waste Management		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Open book timed assessment ~ 1.5 hours		

This unit has 2 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand how to contribute to the sustainability, maintenance and preservation of the environment.	1.1 Explain ways to minimise environmental damage from the use of: a. tools b. materials. 1.2 Explain how to recognise wastage of energy, equipment and materials. 1.3 Explain how working methods can be adapted to minimise pollution and waste of resources in at least two industries.
2 Understand how sustainable waste management can minimise the risk to the environment.	2.1 Evaluate methods of waste management which will minimise the risk to the environment.

Access to HE Diploma Unit

Unit Code:	QU014056		
Title:	The Blood		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the function of blood and its composition.	1.1 Explain the major components and functions of blood. 1.2 Explain the formation of blood cells and how they mature. 1.3 Explain the structure and function of RBC, including the role of haemoglobin, and how they are recycled. 1.4 Describe the structure of WBC and explain their functions in relation to immunity.
2 Understand the blood clotting process.	2.1 Explain the process of haemostasis in detail.
3 Understand blood groups and compatibility.	3.1 Analyse blood group compatibilities and explain why they are compatible or not.

Access to HE Diploma Unit

Unit Code:	QU017109		
Title:	The Endocrine System		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Know the structure of the endocrine system.	1.1 Describe the positions of the main endocrine organs of the body.
2 Know the main features of hormone action.	2.1 Explain the difference in action between two main classes of hormones. 2.2 Compare and contrast the action of hormones with neurones.
3 Understand the action of the pituitary gland.	3.1 Explain how the pituitary gland regulates other glands. 3.2 Describe the link between the pituitary and the nervous system.
4 Understand the action of the adrenal gland.	4.1 Explain the circumstances under which adrenaline is produced. 4.2 Describe some of the hormones of the adrenal gland and their effects. 4.3 Describe the role the adrenal gland plays in maintaining homeostasis.
5 Understand the role of hormones in the control of blood sugar levels.	5.1 Explain the role of insulin and glucagon in the control of blood glucose.

Optional Graded Units: Chemistry

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 **The learner will:**	ASSESSMENT CRITERIA **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'.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
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:	QU025703		
Title:	Chemical Principles: Particles and Forces		
Unit level:	Level 3	**Unit Credit:**	6
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 6 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the structure of atoms, molecules and ions.	1.1 Explain the structure of the atom in terms of position, mass and charge of the particles using appropriate symbols to represent them. 1.2 Explain atomic and mass number, using them to determine the structure of the atom. 1.3 Describe the formation of ions. 1.4 Explain the existence of isotopes.
2 Understand the arrangement of electron in an atom and the distribution of elements in the Periodic Table.	2.1 Describe the electronic configuration of atoms in terms of s, p and d orbitals. 2.2 Describe the structure of the periodic table in terms of the properties of the elements and their electronic arrangements.
3 Understand the nature of elements, compounds and mixtures.	3.1 Explain the nature of elements, compounds and mixtures.
4 Understand mass spectrometry.	4.1 Describe the structure and functions of main parts of a mass spectrometer. 4.2 Explain why atomic mass values may not be whole numbers.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	4.3 Calculate relative atomic mass from mass spectra.
5 Understand bonding and intermolecular forces.	5.1 Explain ionic, covalent and metallic bonding. 5.2 Deduce shapes of simple molecules. 5.3 Describe van der Waals forces and hydrogen bonding. 5.4 Describe the effects of hydrogen bonding. 5.5 Explain physical properties in terms of structure and bonding.
6 Understand the mole concept and its application.	6.1 Convert masses in grams to moles using R.M.M. 6.2 Calculate reacting masses and volumes using the mole concept. 6.3 Use the mole concept to calculate empirical and molecular formulae. 6.4 Determine the formula of a compound by experiment.

Access to HE Diploma Unit

Unit Code:	QU007822		
Title:	Further Organic Chemistry		
Unit level:	Level 3	**Unit Credit:**	6
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 **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand how to describe the sources and principle uses of alkanes.	1.1 Recognise and explain fractional distillation of crude oil as a source of alkanes. 1.2 Explain the uses of alkanes as fuels and chemical feed stocks.
2 Understand the principal functional group chemistry of simple organic compounds.	2.1 Explain typical chemical properties and conduct characteristics tests for functional groups, e.g.: C=C, -OH, -Hal, -NH2, -CO2H, C=O, -C6H5.
3 Understand organic chemical reaction mechanisms.	3.1 Explain and investigate experimentally simple reaction mechanisms.
4 Be able to recognise types of reactions common in organic chemistry.	4.1 Identify and explain common types of chemical reaction. 4.2 Conduct experiments for common types of chemical reaction.
5 Understand the molecular structures and properties of simple examples of polymers.	5.1 Analyse the structure of examples of addition and condensation polymers.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	5.2 Relate and analyse the use of polymers to their properties.

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 **The learner will:**	ASSESSMENT CRITERIA **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:	QU019014		
Title:	Practical Chemical Analysis		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Investigations Scientific report ~ 1000 words		

This unit has 3 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Know how to investigate quantitative analysis on the components of matrices to determine their composition.	1.1 Demonstrate accurately the amount of analyte in matrices. 1.2 Explain the composition of the matrices analysed. 1.3 Critically compare the use of primary and secondary titrimetric standards.
2 Know how to investigate spectroscopic techniques to identify compounds and determine concentrations.	2.1 Demonstrate accurately the concentrations of solutions using the Beer-Lambert law. 2.2 Explain correctly the structures of simple organic compounds from their percentage composition, infrared spectra, mass spectra, 1H NMR and 13C NMR spectra.
3 Know how to investigate chromatographic techniques to identify components and determine the amounts present in samples.	3.1 Explain the operation and applications of capillary GC and HPLC instrumentation and measurements. 3.2 Demonstrate accurately the identity and amount of analytes using qualitative and quantitative GC and HPLC data.

Optional Graded Units: Physics

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 **The learner will:**	ASSESSMENT CRITERIA **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:	QU006259		
Title:	Energetics, Kinetics, Equilibria		
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 **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand the mole concept.	1.1 Apply the mole concept to describe quantity of substance. 1.2 Calculate a mass from a number of moles and vice versa.
2 Understand the energetics of chemical reactions.	2.1 Explain that reactions are accompanied by an energy change. 2.2 Draw reaction profile diagrams to differentiate between exothermic and endothermic reactions. 2.3 Calculate enthalpy changes using bond energies.
3 Understand the factors affecting kinetics.	3.1 Describe the factors influencing reaction rate. 3.2 Explain the effect of temperature concentration and surface area using the collision theory. 3.3 Define activation energy and explain its influences on rate. 3.4 Describe and explain the action of a catalyst. 3.5 Use the Maxwell-Boltzman distribution to explain the effect of a catalyst. 3.6 Explain the effect of mechanism on rate.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
4 Be able to apply equilibrium concepts to chemical reactions.	4.1 Explain the characteristics of the equilibrium state. 4.2 Define and apply Le Chaterliers principle. 4.3 Explain on a simple level the changes that occur when an equilibrium is disturbed.

Access to HE Diploma Unit

Unit Code:	QU025284		
Title:	Fundamental Physics: Practical Investigation		
Unit level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD3-Application of skills • GD5-Communication and presentation • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Practical investigation and 1500 word report		

This unit has 4 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Be able to plan a practical investigation with due regard to fair testing.	1.1 Produce a hypothesis for a practical investigation on a given subject, justifying choice. 1.2 Design an investigation in a series of logical steps. 1.3 As part of the design, identify key variables to be controlled.
2 Be able to follow safety procedures at all times.	2.1 Comply with laboratory safety procedures. 2.2 Carry out a risk assessment for the investigation.
3 Be able to implement a practical investigation.	3.1 Carry out an investigation 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 Be able to make, record and present observations.	4.1 Take and record accurate measurements and readings of observations. 4.2 Present measurements and readings in an appropriate format.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	4.3 Justify choice of graphical representation of data.

Access to HE Diploma Unit

Unit Code:	QU006383		
Title:	Health Physics		
Unit level:	Level 3	**Unit Credit:**	6
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 **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand methods used to image the human body for medical diagnosis.	1.1 Explain the principles of imaging using a range of imaging techniques. 1.2 Summarise and evaluate the advantages and disadvantages of the imaging methods. 1.3 Carry out a simple experiment modelling the behaviour of X-rays using light. 1.4 Write a scientific report of the experiment.
2 Understand methods of medical treatment using ionising radiation, ultrasound and lasers.	2.1 Explain the use of ionising radiation, ultrasound and lasers in medical treatments.
3 Understand the hazards to staff and patients associated with medical imaging technologies.	3.1 Describe and quantify the effects of ionising radiation on tissues and organs. 3.2 Explain the effect of laser light on living tissues. 3.3 Explain the hazards of the strong magnetic fields in the vicinity of an MRI scanner.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
4 Understand safety procedures and equipment used to monitor and reduce the hazards from ionising radiation and laser light.	4.1 Describe and evaluate methods of measuring the radiation dose received by medical staff and patients. 4.2 Describe and evaluate equipment and procedures used to minimise the hazards from radiation and lasers in hospitals.
5 Recognise the benefits of modern imaging techniques in treating injuries and diseases.	5.1 Describe and evaluate the use of a given modern imaging technique in a given treatment.

Access to HE Diploma Unit

Unit Code:	QU025706		
Title:	Physical Science - Environmental Health and Medical Physics		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD1-Understanding the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand infection and infection control in the human.	1.1 Discuss the main categories of micro-organisms. 1.2 Discuss the routes of entry of micro-organisms and their effects in the body. 1.3 Explain the differences between pathogenic organisms and commensal organisms. 1.4 Discuss the principles of infection control.
2 Understand environmental health and environmental pollution.	2.1 Explain the main principles of environmental health. 2.2 Discuss the main causes and effects of environmental pollution. 2.3 Discuss the main aspects of the HASAW and COSHH acts.
3 Understand the electromagnetic spectrum and radiation.	3.1 Explain the electromagnetic spectrum and its parts. 3.2 Explain x-rays and alpha, beta and gamma radiation. 3.3 Discuss the commercial and medical uses of radiation.

Access to HE Diploma Unit

Unit Code:	QU026260		
Title:	Physics: Medical Applications for Radiography		
Unit level:	Level 3	**Unit Credit:**	6
Grading type:	Graded		
Grade descriptors:	• GD1-Understand the subject • GD2-Application of knowledge • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Exam ~ 1.5 hours closed book 2 x academic posters ~ 500 words each 10 minute individual presentation		

This unit has 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	**ASSESSMENT CRITERIA** **The learner can:**
1 Understand heat transfers.	1.1 Distinguish between conduction, convection and radiation.
2 Understand waves used in radiography.	2.1 Define amplitude, wavelength and frequency. 2.2 Evaluate the use of ultrasound in medicine.
3 Understand the main regions of the electromagnetic spectrum.	3.1 Explain the properties of the seven basic types of electromagnetic waves.
4 Understand the difference between ionising and non ionising radiation.	4.1 Distinguish between the properties of alpha, beta and gamma radiation. 4.2 Analyse activity-time graphs. 4.3 Discuss the use of radiation in medicine.
5 Understand the difference between diagnostic and therapeutic approaches to radiography.	5.1 Analyse the differences between diagnostic and therapeutic approaches to radiography.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
6. Understand how x-rays work.	6.1 Explain how x-rays are produced. 6.2 Explain the effects of radiation on living tissue.

Optional Graded Units: Mathematics

Access to HE Diploma Unit

Unit Code:	QU006176		
Title:	Mathematics 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 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **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.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	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.
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:	QU007424		
Title:	Mathematics: Algebra, Exponentials and Logarithms		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD3-Application of skills • GD5-Communication and presentation • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Understand how to solve equations.	1.1 Solve simple linear equations involving brackets. 1.2 Solve quadratic equations using the formula.
2 Understand how to rearrange formulae.	2.1 Rearrange formulae involving sums, differences, products, quotients, brackets, powers and roots.
3 Understand how to use log laws.	3.1 Convert between exponential and logarithmic notation. 3.2 Use the product, quotient and power laws of logarithms and make calculations.
4 Understand how to transform to linear form.	4.1 Draw a straight line from data derived from a non-linear law, using logarithms where necessary.
5 Understand how to use exponential growth and decay.	5.1 Identify data which can be modelled by an exponential function. 5.2 Derive an exponential equation from given date and predict values.

Access to HE Diploma Unit

Unit Code:	QU007442		
Title:	Quantitative Methods - Statistics		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Graded		
Grade descriptors:	• GD3-Application of skills • GD4-Use of information • GD5-Communication and presentation • GD7-Quality		
Academic subject content/other:	Academic Subject Content		
Suggested assessment details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	**ASSESSMENT CRITERIA** **The learner can:**
1 Be able to organise and present data.	1.1 Identify data as qualitative, quantitative, discrete or continuous. 1.2 Select the dominant features of data and suggest plausible interpretations. 1.3 Construct suitable charts and diagrams including histograms and line graphs with suitable scales, state the advantages and disadvantages of a wide range of diagrams.
2 Know how to calculate and use averages.	2.1 Calculate the mean, median and mode of grouped data. 2.2 Choose an appropriate average and justify the choice (e.g. Exam marks - mean; Exam grades - median; qualitative data - mode.
3 Know how to calculate and use measures of spread.	3.1 Calculate standard deviation of raw data and grouped data. 3.2 Use mean and standard deviation to compare different data sets.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
4 Be able to use bivariate data.	4.1 Calculate a coefficient of correlation (e.g. Spearman or Product moment). 4.2 Make statements about the possible causal relationship between variables with strong correlation.
5 Be able to calculate probability.	5.1 Calculate the probability of combined events. 5.2 Construct tree diagrams and use them to solve problems involving combined events. 5.3 Identify events which are independent or mutually exclusive.

Mandatory Units: Ungraded

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:	Notes from a range of sources ~ 300 words Essay plan ~ 200 words Essay ~ 1,000 words		

This unit has 5 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **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.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
	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:	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.
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 **The learner will:**	ASSESSMENT CRITERIA **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:	QU018318		
Title:	Study 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 **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
1 Know how to manage and organise study time.	1.1 Produce, revise and evaluate a personal schedule of study that accommodates own time constrains. 1.2 Where necessary, prioritise and reschedule study plan explaining changes. 1.3 Prioritise and meet assignment deadlines, negotiating new deadlines if needed. 1.4 Devise a strategy for organising coursework.
2 Know how to participate in learning activities.	2.1 Prepare efficiently for tutorials and classroom activities. 2.2 Participate appropriately in classroom activities.
3 Understand assignment requirements.	3.1 Analyse assignment effectively identifying aims and objectives. 3.2 Determine suitable format for assignment, effectively explaining decisions made.
4 Understand learning preferences.	4.1 Analyse different methods of learning. 4.2 Analyse methods of identifying own learning preferences.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **The learner can:**
5 Be able to retrieve information from a range of sources.	5.1 Retrieve information from a range of written texts using a range of reading skills. 5.2 Scan source material, critically evaluating information, selecting accurate and detailed notes to suit purpose. 5.3 Demonstrate the use of a recognised referencing system for retrieved information.

Optional 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:	Please refer to assessment grid.		

This unit has 3 learning outcomes.

LEARNING OUTCOMES **The learner will:**	ASSESSMENT CRITERIA **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:	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:	Please 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:	Please 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:	QU013859		
Title:	Mathematics for Science		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Please 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.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	**The learner can:**
4. Understand how to evaluate formulae.	4.1 Evaluate formulae by substitution using the full range of functions on a scientific calculator.
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:	Please 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:	Please 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:	QU018352		
Title:	Presentation Skills		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Please refer to assessment grid.		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Develop and plan a structured presentation.	1.1 demonstrate skills to plan a timed presentation. 1.2 Develop the structure for a presentation.
2 Conduct research for a presentation from a number of sources	2.1 Identify topic and aims of research. 2.2 Select appropriate resources from different sources. 2.3 Select appropriate information pertinent to the topic
3 Demonstrate ability to deliver a presentation on a complex subject	3.1 Convey information on a chosen topic in the form of a presentation to a group. 3.2 Demonstrate effective use of audio-visual aids appropriate to the topic. 3.3 Demonstrate appropriate eye contact and body language. 3.4 Respond effectively to questions and challenges.
4 Evaluate own skills and performance.	4.1 Critically evaluate own presentation. 4.2 Critically evaluate own delivery of the presentation. 4.3 Identify strategies for improvement.

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:	Please refer to assessment grid.		

This unit has 2 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:	Please 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:	QU011467		
Title:	Spreadsheets		
Unit level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Please 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

Title:	Sustainability Project		
Unit Code:	QU033854		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Academic subject content		
Suggested Assessment details:	Report, including project plan and reflection – 1,000 words		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1. Be able to plan a project to promote sustainability within a specific sector.	1.1 Identify a project to promote sustainability within a chosen sector, justifying your choice. 1.2 Produce a project plan for own project including: • Aims and objectives • Time scales • Methods • Resources required • Any health and safety considerations.
2. Be able to carry out a sustainability project.	2.1 Carry out a sustainability project. 2.2 Produce a report on the findings of the sustainability project.
3. Be able to review the success of a sustainability project.	3.1 Evaluate the extent to which the project has met the aim and objectives. 3.2 Evaluate the extent to which the project has met the aim and objectives.

Access to HE Diploma Unit

Title:	The Fundamentals of Environmental Sustainability		
Unit Code:	QU033880		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Academic subject content		
Suggested Assessment details:	Report – 1500 words		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1. Know the importance of sustainability within a specific sector.	1.1 Explain what is meant by sustainability. 1.2 Explain the importance of supporting environmental sustainability within a chosen sector.
2. Know how environmental sustainability can be supported within the chosen sector.	2.1 Describe environmental issues relevant to a chosen sector. 2.2 Describe the impact of the chosen sector on the environment. 2.3 Explain how these environmental issues could be minimised within a chosen sector. 2.4 Analyse factors to consider when working towards environmental sustainability in a chosen sector.
3. Know how the 3 Rs of sustainability can be applied within the chosen sector.	3.1 Explain the 3 Rs of sustainability. 3.2 Analyse ways that a chosen sector can implement the 3 Rs of sustainability.
4. Understand the importance of waste management within the chosen sector.	4.1 Explain the importance of having a waste management strategy within a chosen sector. 4.2 Explain environmental hazards or risks that could be caused by poor waste management within a chosen sector.

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:	Please 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.

Access to HE Diploma Unit

Unit Code:	QU025609		
Title:	Work Placement		
Unit Level:	Level 3	**Unit Credit:**	3
Grading type:	Ungraded		
Academic subject content/other:	Other		
Suggested assessment details:	Please refer to assessment grid.		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	**ASSESSMENT CRITERIA**
The learner will:	**The learner can:**
1 Be able to analyse own work placement role within a work setting.	1.1 Evaluate own work placement role within the work setting.
2 Understand the structure of the wider organisation.	2.1 Analyse the structure of the wider organisation.
3 Be able to demonstrate how work experience relates to own course of study.	3.1 Evaluate how work experience relates to own course of study. 3.2 Reflect on self-development over the period of the placement.

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:

Tel: 01206 911211

Email: enquiries@gatewayqualifications.org.uk

7. Gateway Qualifications

Gateway Qualifications, a not for profit registered charity, is an Awarding Organisation and authorised Access Validating Agency based in Colchester.
We work with learning providers and industry experts to design and develop qualifications that benefit the learner and the employer.

We support flexible, responsive and quality assured learning opportunities whether it's in the classroom, at work, in the community or through distance learning.

We are recognised by Ofqual, to design, develop and submit qualifications to the Regulated Qualifications Framework (RQF) and by the Quality Assurance Agency for the development and approval of Access to Higher Education Diplomas.

gateway qualifications

enquiries@gatewayqualifications.org.uk
www.gatewayqualifications.org.uk
Tel: 01206 911 211

Charity Registration No. 114282
Registered in England Company No. 5502449