

DIPLOMA GUIDE



Access to Higher Education Diploma (Computing)

Access to HE

Apprenticeships

Digital

English & Maths

ESOL

Personal & Social Development

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This qualification guide covers the following qualification:

Qualification Number	Learning Aim Code	Diploma Title	Validation Period
QAAQ004754	40014812	Access to Higher Education Diploma (Computing)	1 August 2024 – 31 July 2029

Version/Date	Change Detail	Section/Page Reference
1.0 March 2024	n/a	n/a
1.1 April 2024	Changes to the Equity, Diversity and Inclusion Policy	Pg11
1.2 July 2024	Update to Sector Subject Area	Pg8
1.3 January 2025	Amendment of column heading of assessment tables (removal of “Suggested” from assessment method column)	Pg14-20

About this Access to HE Diploma Guide

This Access to HE Diploma Guide is intended for Tutors, Assessors, Internal Quality Assurers, Quality Managers and other staff working at or affiliated with Gateway Qualifications' Access to HE approved providers or prospective providers.

It sets out what is required of the learner in order to achieve the Access to HE Diploma. It also contains information specific to managing and delivering the Access to HE Diploma 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 Gateway Qualifications website, which contain more detailed guidance on assessment and verification practice.

In order to deliver this Access to HE Diploma, your organisation must be a Gateway Qualifications recognised provider and approved to offer this Access to HE Diploma.

If your organisation is not yet recognised, or approved for this, 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

About this Access to HE Diploma Guide	3
1. Diploma Information	7
1.1 Overview of the Access to HE Diploma.....	7
1.2 About this Diploma	7
1.3 Purpose	7
1.4 Aims	8
1.5 Objectives.....	8
1.6 Sector Subject Area	8
1.7 Target Groups	8
1.8 Delivery Methods.....	9
1.9 Achievement Methodology	9
1.10 Geographical Coverage	9
1.11 Progression Opportunities.....	10
1.12 Equity, Diversity and Inclusion	10
2. Learner Entry Requirements	11
2.1 Age	11
2.2 Prior Qualifications	11
2.3 Prior Skills/Knowledge/Understanding	11
2.4 Access to Qualifications for Learners with Disabilities or Specific Needs	11
2.5 Additional Requirements/Guidance	12
2.6 Integrity in Learner Recruitment	12
3. Achieving the Access to HE Diploma	13
3.1 Qualification Specification	13
3.2 Rules of Combination	13
3.3 Additional Completion Requirements	21
3.4 Recognition of Prior Learning	21
3.5 Credit Accumulation and Transfer	21
3.6 Credit Values and Notional Learning Hours	21
4. Access to HE Units of Assessment	22
4.1 Unit Specification.....	22
4.2 Academic Subject Content.....	22
4.3 Graded and Ungraded Units	22
4.4 Revisions to Access to HE Units of Assessment	24
5. Assessment and Quality Assurance.....	25
5.1 Provider Requirements.....	25
5.2 Staffing Requirements.....	25

5.3 Facilities and Resources	25
5.4 Assessment.....	26
5.5 Quality Assurance Requirements.....	26
5.6 Additional Requirements/Guidance.....	26
6. Unit Details	27
Mandatory Units: Graded Academic Subject Content	27
Mandatory Unit: Research Graded Academic Subject Content.....	33
Optional Units: Graded Academic Subject Content.....	35
Mandatory Units: Ungraded.....	67
Optional Units: Ungraded	69
7. What to Do Next.....	92
8. Gateway Qualifications.....	92

1. Diploma Information

1.1 Overview of the Access to HE Diploma

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

- a level 3 qualification, regulated by the Quality Assurance Agency for Higher Education (QAA)
- a unitised qualification, based on units of assessment which are structured in accordance with the Access to Higher Education unit specification
- a credit-based qualification, operated in accordance with the terms of the Access to Higher Education Diploma Specification
- a graded qualification, as determined by the Access to Higher Education 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 2024. The specification for the achievement of the Access to HE Diploma states that:

- the total credit achievement is 60 credits
- of these 60 credits, 45 must be achieved at level 3 from graded units containing academic subject content
- the remaining 15 credits may be achieved at level 2 or 3 from ungraded units.

Individual named Diplomas are identified by separate titles and are validated 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 provides learners with a wide choice of units to support progression into Computing degree programmes. The mandatory group of units ensures that learners have a good understanding of themes relevant to Computing including key topics in Computer Systems, Computer Programming and Mathematics for Computing.

In addition to the graded units, learners must choose from a selection of mandatory and optional ungraded units to support underpinning skills for work within the sector and for further academic study.

1.3 Purpose

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

1.4 Aims

The qualification aims to:

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

1.5 Objectives

The objective of the Diploma is to enable learners to:

- satisfy the general academic requirements for entry to Higher Education
- prepare for Higher Education level study generally and in subject areas appropriate to an intended Higher Education 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

6.1 Digital Technology (practitioners).

1.7 Target Groups

The target groups of this Diploma are as follows:

- Adults who, because of social, educational or individual circumstances, may have achieved few, if any, prior qualifications and wish to progress to Higher Education.
- Adults who have gone straight into industry (perhaps following apprenticeship routes) who wish to progress to Higher Education.

These specified target groups are appropriate to the proposed Diploma because it offers the following:

- Strong academic study skills that are built into the design of the Diploma and provide a thorough grounding to support progression.
- A lean delivery model in terms of units so learners are not overwhelmed.
- Ability to study a range of subjects as A-level learners do prior to choosing a focus for Higher Education.

The Diploma will address the learning needs of these target groups with underpinning skills to support academic study and provide a level 3 qualification linked to their proposed Higher Education study. A broad range of knowledge will be acquired to support an understanding of Computing including, a range of topics such as, cybersecurity, understanding robots and control systems, the impact of artificial intelligence within the industry and website design and development, ensuring that the learner is fully prepared for progression onto the relevant degrees.

1.8 Delivery Methods

Delivery methods for the Access to Higher Education Diploma (Computing) can include:

- Face to face
- Blended learning.

Work placements would also be beneficial and visits to software companies would widen opportunities.

It is recommended that if learners undertake the Creating Robots and Control Systems unit, they should complete Understanding Robots and Control Systems unit first.

Depending on the choice of units, assessment methods could include: academic poster, report, written questions and answers, open and closed book exams, worksheets, investigation, project, presentation, creation of programmes, short answer questions, practical activities, case study analysis, essay, SWOT analysis, controlled assessment, literature review or a portfolio of evidence.

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.

Learners will complete a planned, balanced and coherent programme of study, through which they will be able to acquire subject knowledge and develop academic skills that are relevant to the intended progression route(s). The units include a balance of units that allow the learners to study a broad range of topics 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 allow learners to develop skills relevant to the subject area.

1.10 Geographical Coverage

This qualification has been approved for delivery in England. If a provider based in Wales would like to offer this qualification, please contact Gateway Qualifications.

1.11 Progression Opportunities

The rules of combination include both mandatory and optional units. Stakeholders including Access to HE providers, subject experts and Higher Education Institute (HEI) representatives have reviewed and provided feedback on the appropriateness and coherency of the rules of combination, including the balance and mix of mandatory and optional units, for the intended progression route(s). All units are subject to the unit review process as part of the Diploma development process, this includes as a minimum a review by a subject expert in terms of the academic challenge of the level and content and a review to ensure the unit meets QAA format specifications. Monitoring of standards will be managed through the quality assurance and moderation process.

Following successful completion of the Access to Higher Education Diploma (Computing) learners may progress to the following:

- BSc (Hons) Computer Science (single honours)
- BSc (Hons) Computer Science and Education with Qualified Teacher Status
- BSc (Hons) Computing for Business
- BSc (Hons) Computing
- BSc (Hons) Computing and ICT
- BSc (Hons) Computer Science and Mathematics
- BSc (Hons) Software Engineering

The qualification does not provide guaranteed entry to UK Higher Education.

1.12 Equity, Diversity and Inclusion

At Gateway Qualifications we aim to create an environment which celebrates differences and strives for equitable opportunities and outcomes for all. More than a mere commitment, this Equity, Diversity, and Inclusion Policy stands as a framework, informing every aspect of the work we do. It is our aim to support our staff and learners, including apprentices, of all abilities, ensuring the development, delivery, and awarding of qualifications in a fair and inclusive manner.

For full details please see the [Equity, Diversity and Inclusion Policy](#).

2. Learner 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. Generally, this 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 before undertaking this qualification.

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

2.3 Prior Skills/Knowledge/Understanding

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

2.4 Access to Qualifications for Learners with Disabilities or Specific Needs

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

Gateway Qualifications has a duty to permit a reasonable adjustment where an assessment arrangement would disadvantage a learner 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 or provide an unfair advantage:

- adapting assessment materials
- adapting 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 learner's ability to demonstrate the skills, knowledge or understanding, e.g. use of spellchecker in an English assessment
- using assistive technology
- use of closed-circuit television (CCTV), coloured overlays, low vision aids
- use of a different assessment location
- use of information and communications technology (ICT)/responses using electronic devices.

It is important to note that not all 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 adjustments specified above.

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

2.5 Additional Requirements/Guidance

Learners must have a UK, including the Channel Islands and Isle of Man, address (including BFO) to be registered on an Access to HE Diploma.

2.6 Integrity in Learner Recruitment

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

3. Achieving the Access to HE Diploma

3.1 Qualification Specification

The generic requirements for the Access to HE Diploma are that:

- learners must achieve a total of 60 credits, of which 45 credits must be achieved at level 3 from graded units that are concerned with academic subject content and the remaining 15 credits can be achieved at level 2 or level 3 from units which are ungraded.
- all learners must register for at least one 6-credit or one 9-credit unit as part of their programme of study; this can be a graded or ungraded unit.
- the maximum number of credits that can be made up from 6-credit or 9-credit units is 30 credits; this can be from graded and ungraded 6-credit and 9-credit units.

The approved rules of combination for this Diploma are detailed below.

Where there is a selection of optional units within the permitted rules of combination, the selection of units to be used to form the Diploma course must be made before the learners are registered. Learners must be registered with Gateway Qualifications within 6 weeks (42 days) of starting their course, and units must be selected within 12 weeks from starting their course.

3.2 Rules of Combination

The structure sets out the units required to achieve the Access to HE Diploma, consisting of:

- Graded Academic Subject Content mandatory units – level 3
- Graded Academic Subject Content optional units – level 3
- Research Graded Academic Subject Content units – level 3
- Ungraded units – level 2/3.

Learners must achieve a total of 60 credits, of which 45 credits must be achieved at level 3 from graded units which are concerned with academic subject content and the remaining 15 credits must be achieved at level 3 from units which are ungraded. All learners must register for at least one 6-credit or one 9-credit unit as part of their programme of study; this can be a graded or ungraded unit. The

maximum number of credits that can be made up from 6-credit or 9-credit units is 30 credits; this can be from graded and ungraded 6-credit and 9-credit units.

Mandatory Units: Graded Academic Subject Content

Learners must complete 12 credits from the mandatory graded units.

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034790	Introduction to Computer Systems	3	6	Academic	Academic posters x 3 Report	400 words x 3 1500 words
QU034796	Introduction to Programming	3	3	Academic	Creation of program with developmental notes	Program, 500 words
QU034810	Mathematics for Computing	3	3	Academic	Controlled assessment	2 hours closed book

Mandatory Unit: Research Graded Academic Subject Content

Learners must achieve 6 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034826	Research Project for IT - Methodology	3	6	Academic	Research plan Research report Evidence of research carried out	200 words 2500 words 300 words

Optional Units: Graded Academic Subject Content

Learners must achieve 27 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034550	Algebra	3	3	Academic	Exam	2 hours closed book
QU034552	Algorithms and Linear Programming	3	3	Academic	Controlled assessment	2 hours
QU034556	Artificial Intelligence	3	3	Academic	Assignment and portfolio	750 words and codes
QU034570	Calculus: Differentiation	3	3	Academic	Exam	2 hours closed book
QU034568	Calculus: Integration	3	3	Academic	Exam	2 hours closed book
QU034754	Computational Theory	3	3	Academic	Exam	1.5 hours open book
QU034756	Computer Games Design	3	6	Academic	Report Presentation Game design document	750 words 10 minutes and 5 minutes Q&A 1500 words
QU034574	Computer Logic and Number Systems	3	3	Academic	Exam	2 hours closed book
QU034758	Computer Networks	3	6	Academic	Report Exam Academic poster	1200 words 1 hour 30 minutes open book 200 words
QU034870	Creating Robots and Control Systems	3	3	Academic	Project - plan, create, test and evaluate a robot and control system	800-1000 words plus simple working robot and control system
QU034586	Cybersecurity	3	3	Academic	Presentation	20 minutes including Q&A and witness statement

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034766	Data Representation	3	3	Academic	Case study	1500 words
QU034864	Further Statistics	3	6	Academic	Exam x 2	2 hours closed book x 2
QU034774	Game Engines	3	6	Academic	Visual presentation video Game design and game	10-15 minutes video 500 words annotated development diary
QU034612	Geometry	3	3	Academic	Exam	2 hours closed book
QU034800	IT Project	3	6	Academic	Report including data dictionary, design diagrams and test plan	2000 words
QU034624	JavaScript	3	6	Academic	Controlled assessment	2 hours x 2
QU034630	Matrices	3	3	Academic	Exam	2 hours closed book
QU034814	Mobile Games Development	3	6	Academic	Report Mobile game development	750 words
QU034654	Software Fundamentals - Object Oriented Programming	3	3	Academic	Report and program	750 words and program
QU034842	Systems Analysis	3	3	Academic	Report	1500 words
QU034850	The Ethics of Computing	3	3	Academic	Report	1500 words
QU034678	Trigonometry	3	3	Academic	Exam	2 hours closed book
QU034858	Understanding Robots and Control Systems	3	3	Academic	Report	1500 words
QU034860	User Experience (UX) 3D Design Project	3	6	Academic	Project report Presentation Portfolio of evidence	1000 words 10 mins inc Q&A Portfolio of evidence

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034690	Website Design and Development	3	6	Academic	Project - plan, design and develop interactive website with a minimum of five pages including development notes	Creation of website 400-500 words

Mandatory Units: Ungraded

Learners must achieve 3 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034710	Preparation for Higher Education	3	3	Other	Research	Review of research, course and decision 500 words
					Application form and personal statement	Application form and personal statement 750 words*
					Prepared Q&A	Prepared Q&A 250 words (*4000 characters or roughly 450 word UCAS limit for personal statement)

Optional Units: Ungraded

Learners must achieve 12 credits from this group.

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034692	Academic Writing Skills	3	3	Other	Notes from a range of sources Essay plan Essay	300 words 200 words 1000 words
QU034694	Application of Number - Interpreting and Presenting Information	3	3	Other	Exam	2 hours closed book
QU034696	Communication - Speaking and Listening	3	3	Other	Oral presentation Group discussion Self evaluation	15 minutes 15-20 minutes and supporting materials 500 words 200 words
QU034698	Complex Numbers	3	3	Other	Exam	2 hours closed book
QU034700	Computer Data Protection	3	3	Other	Structured questions Case study analysis	750 words 750 words
QU034702	Developing Professional Attributes	3	3	Other	SWOT analysis Professional development plan Essay	200 words 300 words 1000 words
QU034704	Inclusivity and Disability	3	3	Other	Exam Presentation with supporting notes	1 hour closed book 10 minutes
QU034706	Mathematics - Calculations	3	3	Other	Exam	2 hours closed book

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034708	Optimising Examination Performance	3	3	Other	Examination preparation plan Examination paper from another unit Reflective journal	500 words 1-2 hours 800 words
QU034712	Presentation Skills	3	3	Other	Notes from a range of sources Presentation Presentation lecture notes and handouts	300 words 200 words 1000 words
QU034714	Presenting Information Using ICT	3	3	Other	Notes from a range of sources Presentation Presentation lecture notes and handouts	300 words Presentation 200 words
QU034716	Problem Solving in the Workplace	3	3	Other	Project - analyse and propose solutions to at least two workplace problems including justification for selected solution	1500 words
QU034718	Professional Interpersonal Behaviours	3	3	Other	SWOT analysis Case study Reflective account	250 words 750 words 500 words
QU034720	Promoting Wellbeing and Building Resilience	3	3	Other	Report	1500 words
QU034722	References and Reliability of Sources	3	3	Other	Literature review	1500 words including recognised form of referencing and bibliography
QU034724	Relational Database	3	3	Academic	Exam	2 hours closed book

Unit Code	Unit Title	Level	Credits	Content	Assessment Methods	Assessment Volume
QU034726	Spreadsheets	3	3	Other	Portfolio of evidence	Spreadsheet and 500 words supporting notes
QU034728	Statistics	3	3	Other	Exam	2 hour closed book
QU034730	Study Skills for Higher Education	3	3	Other	Report Summary Samples of notes Study timetable Revision timetable Essay in controlled conditions Presentation	500 words Approx. 150 words Samples of notes x 2 To cover 2 weeks To cover 2 weeks 1.5.hrs 10 minutes including visual aids and appropriate resources
QU034732	Sustainability Project	3	3	Other	Project plan Report Reflection	250 words 1000 words 250 words
QU034734	The Fundamentals of Environmental Sustainability	3	3	Other	Report	1500 words
QU034736	Writing Reports	3	3	Other	Report plan Presentation of report plan Report	Plan 2-3 minutes 1000 words

3.3 Additional Completion Requirements

Learners will probably require a pass in Maths and English at GCSE level or Functional Skills at level 2 to progress onto a degree course. Providers should guide learners to ensure they are aware of Higher Education 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 the qualification they wish to undertake.

For further information, please refer to Annex C, Access to Higher Education Diploma Specification:

[The Access to Higher Education Diploma Specification, July 2023 \(qaa.ac.uk\) - Applicable to new students registering from 1 August 2024](https://www.qaa.ac.uk/quality-assurance/standards-and-requirements/ahed-specification)

3.5 Credit Accumulation and Transfer

A maximum of 30 credits will be permitted to be exempted from this Diploma on the basis of relevant prior certificated achievement; a maximum of 30 credits at level 2 (where applicable) or level 3 may be awarded through the accreditation of prior experiential learning.

3.6 Credit Values and Notional Learning Hours

The credit value of a unit indicates the number of credits that may be awarded to a student for the successful achievement of all the learning outcomes of that unit. The determination of the credit value of a unit is a matter of professional judgement for AVAs, exercised within their validation processes. These judgements are made on the basis of 'notional learning hours', where one credit represents those learning achievements that can be demonstrated in 10 notional learning hours. The concept of 'notional learning hours' therefore takes into account all learning which may be relevant to the achievement of the learning outcomes, including directed and private study, practical and project work, assignments and assessment time.

4. Access to HE Units of Assessment

4.1 Unit Specification

A common unit specification applies to all units within 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
- 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 knowledge and skills covered within the unit 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 maths, or study skills.

4.3 Graded and Ungraded Units

Graded Academic Subject Content units

Grading operates at unit level and only applies to units that have been approved by Gateway Qualifications within a named Access to HE Diploma. Learner achievement for graded units is recorded as pass, merit or distinction for each unit, as set out in the QAA Access to Higher Education Grading Scheme, 2024 (available via the link below) - Applicable to new learners registering from 1 August 2024. Graded units will also satisfy the criteria of academic subject content.

There is a common set of broad, generic grading standards which are used as the basis for all grading judgements on all courses. The three grading standards relate to different aspects of performance that are relevant to the assessment of a learner's readiness for higher education:

1. Knowledge and Understanding
2. Subject Specific Skills
3. Transferable Skills

All three grading standards are used with every graded unit and across every assignment within a graded unit.

Each of the three grading standards includes a set of more detailed component items which describe types of performance associated with the standard. For each component item there are parallel statements at merit and distinction, which describe increasingly demanding standards of achievement. (The distinction grade does not introduce new or 'higher level' capabilities or skills compared with merit.) When tutors use the standards for the grading of a particular unit, they select the most appropriate sub-components of the standards. In the case of Grading Standard 3 (Transferable Skills), tutors also choose at least two out of the three components, before selecting the relevant sub-components. All three sub-components must be used across the Diploma, and component b (see The Access to HE Grading Scheme Section B: The Grading Standards) must be used for all research project units. This allows the generic framework to be tailored to the specific nature of different subjects.

Grading standards and units

- In units with more than one assignment it is not permissible to award a grade to each assignment; grading takes place at the level of the unit only.
- In units with more than one assignment, it is not permissible to use individual assignments to grade individual grading standards (for example, assignment one cannot be used to grade only Knowledge and Understanding with assignment two used to grade both Subject skills and Transferable skills).
- The choice of sub-components at unit level is normally made during the construction of the unit assessment plan and should be appropriate to cover the range of individual assignments. Therefore, the sub-components are not assigned when a unit is validated.
- Only when all assignments for an individual unit are assessed and the tutor has determined that the learner has met all the Learning Outcomes and Assessment Criteria for all unit assignments (and therefore has passed the unit) will grading of the unit take place. Grades for individual assignments must not be awarded.
- A grade indicator for each grading standard is awarded at pass, merit or distinction. The tutor will review all assignments associated with the individual unit and determine if the learner has demonstrated the standard for the grades of merit or distinction or whether the outcome remains as a pass.
- The tutor must record in writing their justification for the grade indicator awarded for each grading standard.
- The tutor reviews the three grade indicators that have been awarded for the unit and determines the overall grade for the unit. The overall grade is a recommendation to the awards board, where it will be considered and confirmed by the Board.

The full grading standards specification can be accessed via the following link, which also provides detailed information on grading:

[Access to Higher Education Diploma Specification and Grading Scheme 2024 \(qaa.ac.uk\)](https://qaa.ac.uk/Access-to-Higher-Education-Diploma-Specification-and-Grading-Scheme-2024)

Ungraded Units

Ungraded units are either achieved or not achieved. Ungraded units will satisfy the criteria of study skills or academic subject content and will be level 2 or level 3 units.

4.4 Revisions to Access to HE Units of Assessment

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

5. Assessment and Quality Assurance

5.1 Provider Requirements

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

- the main base is in the UK, including the Channel Islands and Isle of Man,
- systems are in place to ensure that only learners with a UK address (including BFO) are registered for an Access to HE Diploma
- there are clear arrangements for the day-to-day operational management and coordination of Access to HE Diploma delivery
- there are appropriate facilities and resources at each site, and for each mode of delivery
- staff have the professional competence and skills necessary to teach and assess the units available on the Diploma
- arrangements for providing pre-course guidance to applicants and criteria for selection and admission to Access to HE courses, which are consistent with QAA's requirements with respect to admissions
- the expertise and resources to provide information, advice and guidance on higher education applications and progression opportunities are available
- systems are in place for maintaining secure records of individual learners' registration and achievement
- internal moderation arrangements meet Gateway Qualifications' requirements
- arrangements are in place for internal course monitoring and self-evaluation and feedback
- procedures and criteria for the recognition of prior learning meet Gateway Qualifications' requirements
- quality assurance procedures are in place relating to the delivery of provision, including transparent processes for handling appeals and complaints.

Providers should refer to the Gateway Qualifications Access to Higher Education Provider Handbook for further information on providers requirements.

5.2 Staffing Requirements

Providers are required to ensure that:

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

5.3 Facilities and Resources

Learners will require access to specialist software and computer laboratories resources for some units, depending on the selection of units.

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 providers to develop an assessment strategy that meets the needs of their individual learners, providers can select an alternative assessment method for the unit(s) within the Diploma using the equivalence guidance published on the Gateway Qualifications website.

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

Through the Diploma guides, standardisation activities and moderation, Gateway Qualifications will provide information about unit content, delivery and assessment methods to ensure the required standards of achievement are fulfilled, whenever and wherever the Diploma is delivered.

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 consisting of provider moderation and sampling.

These processes are set out within the Quality Assurance section of the Gateway Qualifications Access to Higher Education 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

Title:	Introduction to Computer Systems		
Unit Code:	QU034790		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 6 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand the characteristics of computer hardware components.	1.1. Describe the five main components of a computer.
	1.2. Explain how these components are connected and communicate via data and address buses.
	1.3. Explain the flow of data to and from these components (fetch-decode-execute).
2. Be able to analyse how Input/Output devices are used for specific purposes.	2.1. Analyse a variety of I/O devices and their use for specific purposes.
3. Be able to evaluate the effectiveness of a range of storage media.	3.1. Evaluate the effectiveness of a range of storage media devices for specific purposes.
4. Understand how data is represented on a computer.	4.1. Explain how data is represented on a computer including: <ul style="list-style-type: none"> bits and bytes different methods used to represent text, numeric and other information.
5. Understand the startup procedures of a computer.	5.1. Explain the role of the following in relation to a specific computer system: <ul style="list-style-type: none"> a) BIOS routines b) the POST procedure c) the role of the CMOS RAM.

	5.2. Summarise key features of two operating systems.
	5.3. Summarise the operating system files and the order in which they are loaded for a selected operating system.
	5.4. Explain the role of Plug-and-Play in a selected operating system: <ul style="list-style-type: none"> • at startup • whilst the system is in use.
6. Be able to analyse computer specifications for a given purpose.	6.1. Explain how ports are used to connect external devices.
	6.2. Where a choice of different types of port exists, justify the preference for one port over another.
	6.3. Explain the function of three cards that could be used in a computer system.
	6.4. Analyse when different cards might be chosen.

Access to HE Diploma Unit

Title:	Introduction to Programming		
Unit Code:	QU034796		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to use a high-level language compiler.	1.1. Carry out file management activities.
	1.2. Use editor for creating and editing source programs.
	1.3. Interpret compilation and run time error messages to take corrective action.
2. Be able to implement simple programs.	2.1. Declare and use meaningful variables and constants.
	2.2. Declare appropriate simple data types.
	2.3. Use meaningful identifiers.
	2.4. Write programs including: <ul style="list-style-type: none"> • arithmetic • simple input • formatted output statements.
	2.5. Make program easier to read and understand by using: <ul style="list-style-type: none"> • spaces • blank lines • indentation • conditional statements.
3. Be able to use program control structures.	3.1. Select appropriate relational operators.
	3.2. Use two select statements comments.
	3.3. Use three iteration statements.
4. Be able to create program documentation.	4.1. Design a program supported by appropriate documentation.
	4.2. Implement and test program supported by appropriate documentation.

Indicative Content:

AC 2.5: Conditional statements could include: IF – THEN – ELSE – ENDIF.

AC 4.1: Documentation could include pseudocode, data flowcharts, debug and use of test data.

Access to HE Diploma Unit

Title:	Mathematics for Computing		
Unit Code:	QU034810		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Know how to represent denary integers in different formats.	1.1. Convert denary numbers into Binary Coded Decimal format and vice versa.
	1.2. Convert denary numbers into hexadecimal and vice versa.
	1.3. Convert integer into Sign and Magnitude format and store them as 8-bit or 16-bit numbers.
	1.4. Convert integers into One's Complement and Two's Complement format.
	1.5. Determine whether an overflow occurs for a given format.
2. Know how to perform arithmetic on integers in binary.	2.1. Perform simple arithmetic operations using: <ul style="list-style-type: none"> a) binary addition of unsigned integers b) binary subtraction of unsigned integers c) binary multiplication of unsigned integers d) binary division of unsigned integers e) binary addition of signed integers f) binary subtraction of signed integers.
	2.2. Explain the effect of word length on the allowable numbers on unsigned and signed formats.
	2.3. Explain what the ASCII representation of data is.

	2.4. Explain how to convert Hex to ASCII code.
3. Know how to represent integers and numbers with fractional parts in different formats.	3.1. Convert into binary and vice versa: <ul style="list-style-type: none"> • simple fractions • decimals.
	3.2. Use floating point notation to store a decimal number as a 16-bit number.
	3.3. Calculate the degree of accuracy given: <ul style="list-style-type: none"> • a 1-bit sign • a 5-bit exponent • 10-bit mantissa.
	3.4. Describe the limitations of representing real numbers in a computer system and how errors occur.

Mandatory Unit: Research Graded Academic Subject Content

Access to HE Diploma Unit

Title:	Research Project for IT - Methodology		
Unit Code:	QU034826		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

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

5. Be able to evaluate and reflect on own research project.	5.1. Reflect on the project design and methodologies.
	5.2. Evaluate findings in relation to aims, previous research and relevant theory.
	5.3. Identify recommendations for the future.

Indicative Content:

AC 4.4: For example, Harvard referencing.

Optional Units: Graded Academic Subject Content

Access to HE Diploma Unit

Title:	Algebra		
Unit Code:	QU034550		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand what an algebraic expression is.	1.1. Using examples, explain the key components of algebraic expressions.
2. Be able to solve problems with algebraic expressions.	2.1. Simplify an algebraic expression.
	2.2. Expand a bracketed expression.
	2.3. Re-arrange an algebraic expression.
	2.4. Solve a problem involving an algebraic fraction.
3. Be able to solve problems involving equations and inequalities.	3.1. Solve an algebraic equation.
	3.2. Solve an inequality.
	3.3. Solve problems involving polynomial equations.
	3.4. Solve problems involving roots of a polynomial.

Indicative Content:

AC 1.1: key components include: Variables, Constants, Coefficients, terms, factors, Mathematical operations (e.g. addition, subtraction, multiplication, division and exponents), in monomial, binomial, trinomial and polynomial expressions.

AC 2.1: Use distributive, associative and commutative algebraic properties and rules (combine like terms, factor out common terms, simplify fractions, simplify exponents) to reduce the expression to a more manageable and understandable form.

AC 2.2: Multiplying all the terms Inside a bracket with that outside a bracket or a set of other brackets, double and triple brackets, with other terms, including indices.

AC 2.3: Change the subject of a formula, inequalities.

AC 2.4: simplification, adding, subtracting, multiplying and dividing algebraic fractions, solving quadratic using factorisation.

AC 3.1: Solve simultaneous equations in two variables by elimination and by substitution, including one linear and one quadratic equation.

AC 3.2: Solve linear and quadratic inequalities in a single variable and interpret such inequalities graphically, including inequalities with brackets and fractions. Express solutions through correct use of 'and' and 'or', or through set notation.

AC 3.3: Manipulate polynomials algebraically, including expanding brackets and collecting like terms, factorisation and simple algebraic division; use of the factor theorem.

AC 3.4: including roots.

Access to HE Diploma Unit

Title:	Algorithms and Linear Programming		
Unit Code:	QU034552		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand algorithms.	1.1. Explain different types of algorithms: <ul style="list-style-type: none"> • Sorting algorithm • Search algorithm • Packing algorithm.
2. Be able to solve problems using algorithms.	2.1. Carry out a sorting algorithm.
	2.2. Implement a search algorithm.
	2.3. Implement a packing algorithm.
	2.4. Solve problems involving graphs and networks.
	2.5. Find a minimum spanning tree.
3. Understand linear programming and shortest path algorithms.	3.1. Use an algorithm to find the shortest path in a network.
	3.2. Solve problems involving critical path analysis.
	3.3. Solve problems involving linear programming.

Access to HE Diploma Unit

Title:	Artificial Intelligence		
Unit Code:	QU034556		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA
The learner will:	The learner can:	
1. Understand artificial intelligence fundamentals.	1.1.	Explain the fundamental principles of artificial intelligence.
	1.2.	Assess the impact of current artificial intelligence applications.
2. Understand machine learning and neural networks.	2.1.	Explain the principles of machine learning.
	2.2.	Explain the importance of data management.
	2.3.	Analyse approaches to neural networking.
3. Be able to create an artificial intelligence solution.	3.1.	Develop an artificial intelligence solution to a simple problem using an appropriate language.
	3.2.	Test and optimise an artificial intelligence programme.

Access to HE Diploma Unit

Title:	Calculus: Differentiation		
Unit Code:	QU034570		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand types of stationary points.	1.1. Explain the different types of stationary points.
2. Be able to differentiate using a range of functions.	2.1. Differentiate by first principles.
	2.2. Differentiate using the chain rule.
	2.3. Differentiate using the product rule.
	2.4. Differentiate using the quotient rule.
3. Be able to apply differentiation to solve problems.	3.1. Solve problems involving parametric equations.
	3.2. Solve problems involving implicit differentiation.
	3.3. Solve problems involving tangents and normals.
	3.4. Solve problems involving stationary points.

Access to HE Diploma Unit

Title:	Calculus: Integration		
Unit Code:	QU034568		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Understand how to integrate a product by parts.		1.1.	Explain the hierarchy of functions used when integrating a product by parts.
2. Be able to integrate using a range of functions.		2.1.	Integrate a polynomial function.
		2.2.	Integrate a trigonometric function.
		2.3.	Integrate a product by substitution.
		2.4.	Integrate a product by parts.
3. Be able to apply integration when solving problems.		3.1.	Solve problems involving partial fractions.
		3.2.	Solve problems involving area under a curve.
		3.3.	Solve problems involving volumes of revolution.
		3.4.	Solve problems involving differential equations.

Access to HE Diploma Unit

Title:	Computational Theory		
Unit Code:	QU034754		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand automata, computability and complexity.	1.1. Explain automata theory.
	1.2. Explain computability theory.
	1.3. Explain complexity theory.
2. Understand tuples, relations and graph theory.	2.1. Explain the difference between sets, sequences and tuples.
3. Be able to solve problems using tuples, relations and graph theory.	3.1. Solve problems involving tuples.
	3.2. Solve problems involving relations.
	3.3. Solve problems involving graph theory.

Access to HE Diploma Unit

Title:	Computer Games Design		
Unit Code:	QU034756		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Know the fundamentals of game design.	1.1. Use the BrainHex test to develop an understanding of the fundamentals of: <ul style="list-style-type: none"> • game design • player types.
	1.2. Conduct research into different visual styles used in video games.
	1.3. Review different gameplay mechanics of existing video games.
	1.4. Evaluate the effectiveness of these gameplay mechanics for the player.
2. Be able to generate ideas for a computer game concept.	2.1. Create a set of rules for an original game.
	2.2. Create high concept ideas for a game.
3. Be able to present a games pitch to stakeholders.	3.1. Prepare the game concept to be delivered to stakeholders.
	3.2. Deliver a games pitch to stakeholders.
	3.3. Review feedback received following the pitch.
4. Be able to create game design documentation.	4.1. Expand the game idea to structure the final deliverable into a game treatment document.
	4.2. Create game design documentation based on industry conventions and professional standards.

Access to HE Diploma Unit

Title:	Computer Logic and Number Systems		
Unit Code:	QU034574		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand logic.	1.1. Explain set theory symbols.
	1.2. Explain De Morgan's Law.
2. Be able to solve problems using logic.	2.1. Solve problems involving set theory.
	2.2. Solve problems involving Boolean identities and De Morgan's laws.
	2.3. Prove a Boolean expression using truth tables.
	2.4. Solve problems involving Karnaugh maps.
3. Be able to use number systems.	3.1. Convert between number systems.
	3.2. Carry out computer arithmetic using a non-denary base.
	3.3. Solve problems involving twos complement.
	3.4. Solve problems involving normalised floating points (8-bit mantissa, 4-bit exponent).

Access to HE Diploma Unit

Title:	Computer Networks		
Unit Code:	QU034758		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand the use of computer networks.	1.1. Explain the applications of computer networks.
	1.2. Analyse different types of computer networks.
	1.3. Explain the importance of network security.
2. Understand local area networks (LAN).	2.1. Evaluate the concept of a LAN including its advantages and disadvantages over a collection of standalone microcomputers.
	2.2. Explain the components of a LAN including their functions.
	2.3. Analyse three basic network topologies, including: <ul style="list-style-type: none"> a) detailing the way they are interconnected b) advantages of each network topology c) disadvantages of each network topology.
3. Understand wide area networks (WAN).	3.1. Analyse the concept of a WAN, including its advantages and disadvantages within a global communication perspective.
	3.2. Justify the choice of a range of communication links for particular specifications.

	<p>3.3. Explain the way that the following handle data:</p> <ul style="list-style-type: none"> • circuit-switching • message-switching • packet-switching.
4. Be able to analyse elements of network communication.	4.1. Discuss why standard network protocols were developed.
	4.2. Analyse how the seven protocol levels of the Open Systems Interconnection (OSI) model can be related to a specific application.
	4.3. Evaluate the function of each of the layers in the OSI model within a specific application.

Indicative Content:

AC 1.3: For example: antivirus software, firewalls, access levels within the network system.

Access to HE Diploma Unit

Title:	Creating Robots and Control Systems		
Unit Code:	QU034870		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand how robot and control systems can be used in business.	1.1. Explain how robots and control systems can support a business to improve productivity.
2. Be able to design a robot and control system.	2.1. Analyse a given problem to identify a range of potential solutions using robotics and control.
	2.2. Select one of these solutions, justifying the choice of hardware and software to solve the problem.
	2.3. Design a clear specification for the chosen solution.
3. Be able to create, document and test a working model robot.	3.1. Use the design to create a simple working robot with a control system.
	3.2. Design a test plan for the robot and control system.
	3.3. Implement the test plan for the robot and control system.
	3.4. Review the finished product.

Access to HE Diploma Unit

Title:	Cybersecurity		
Unit Code:	QU034586		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA
The learner will:	The learner can:	
1. Know security protection and risk management issues.	1.1.	Explain threats to IT systems and data.
	1.2.	Analyse factors that affect the vulnerability of IT systems and data.
2. Understand measures to protect IT systems and data from current and evolving threats.	2.1.	Explain measures used by individuals and businesses to protect IT systems and data from current and evolving threats.
	2.2.	Compare security measures used to protect IT systems and data.
	2.3.	Explain how ethical hacking can be used to protect IT systems and data.
3. Understand current legal and ethical requirements related to IT security policies and procedures.	3.1.	Summarise legal requirements and IT security policies and procedures that exist to protect IT systems and data.
	3.2.	Explain ethical and unethical conduct when using IT systems.

Indicative Content:

AC 1.1: Include both internal and external threats.

Access to HE Diploma Unit

Title:	Data Representation		
Unit Code:	QU034766		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand data numeral systems.	1.1. Explain the types of data numeral systems used in computing.
2. Be able to use data numeral systems in practical applications.	2.1. Perform operations involving data numeral systems.
	2.2. Use twos complement to test for overflow in a computer system.
	2.3. State and implement the algorithm to perform an arithmetic operation involving normalised floating points.
3. Understand representation of text, images and sound.	3.1. Explain how coding, including ASCII and Unicode, are used to represent text.
	3.2. Explain how pixels and metadata are used to represent images including coloured images.
	3.3. Explain how the quality of an image can be affected by the resolution of the image.
	3.4. Explain how sampling is used in the process of representing sound.
	3.5. Explain compression of data and how it is processed.

Access to HE Diploma Unit

Title:	Further Statistics		
Unit Code:	QU034864		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 6 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand how statistical diagrams can be used to support problem solving.	1.1. Explain how statistical diagrams can be used in problem solving activities: <ul style="list-style-type: none"> • Stem and leaf plots • Box and whisker plots.
2. Be able to interpret statistical diagrams.	2.1. Apply stem and leaf plots to solve a problem.
	2.2. Apply box and whisker plots to solve a problem.
	2.3. Solve problems involving skewness.
3. Be able to work with bivariate data.	3.1. Perform calculations to establish the correlation coefficient.
	3.2. Solve a problem involving linear regression.
4. Be able to solve probability problems.	4.1. Apply a sample space diagram to solve a problem.
	4.2. Apply Venn diagrams to solve a problem.
	4.3. Apply conditional probability to solve a problem.
	4.4. Solve problems involving mutually exclusive events.
	4.5. Solve problems involving independent events.
	4.6. Solve problems with Bayes theorem.
5. Be able to solve problems involving discrete random variables.	5.1. Solve problems involving the probability distribution.
	5.2. Solve problems involving probability functions.

	5.3. Solve problems involving cumulative distribution functions.
	5.4. Calculate the mean of a discrete random variable.
	5.5. Calculate the variance of a discrete random variable.
	5.6. Solve problems involving linear transformations of a discrete random variable.
6. Be able to solve problems involving the normal distribution.	6.1. Use normal tables to solve a problem.
	6.2. Solve problems involving the mean and standard deviation of a normal distribution.

Access to HE Diploma Unit

Title:	Game Engines		
Unit Code:	QU034774		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand the purposes of game engines.	1.1. Describe the different types of game engines: 2D, 3D, mobile.
	1.2. Explain the purposes and functions of game engines: <ul style="list-style-type: none"> • rendering • animation • programming • physics • effects • sound • artificial intelligence.
2. Know about the use of game engines in the games industry.	2.1. Explain the game engines used by large games companies and indie games companies.
	2.2. Analyse the role of game engines in the games industry.
3. Be able to create a prototype game level using a 2D or 3D game engine.	3.1. Design at least one level for a prototype 2D or 3D game.
	3.2. Source or create assets for the prototype game.
	3.3. Create at least one level using a 2D or 3D game engine based on the design and using the assets sourced or created.
	3.4. Add basic gameplay using visual or text-based coding.

Indicative Content:

AC 2.1: Include both off-the-shelf and bespoke games engines.

Access to HE Diploma Unit

Title:	Geometry		
Unit Code:	QU034612		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand types of curves.	1.1. Explain, using diagrams, different types of curves.
2. Be able to solve problems related to coordinate geometry.	2.1. Solve problems involving straight lines.
	2.2. Solve problems involving circles.
	2.3. Solve problems involving curves.
	2.4. Solve problems involving geometric transformations.
3. Be able to solve problems involving vectors.	3.1. Solve problems involving vector arithmetic.
	3.2. Solve problems involving the Cartesian components of a vector.
	3.3. Solve problems involving the vector equation of a line.
	3.4. Solve problems involving the scalar product.

Access to HE Diploma Unit

Title:	IT Project		
Unit Code:	QU034800		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to analyse a problem in ICT.	1.1. Explain the problem in summary.
	1.2. Explain the required results.
	1.3. Analyse the data.
2. Be able to design a solution to the problem.	2.1. Explain the input and output data.
	2.2. Devise a data dictionary.
	2.3. Produce a design for the solution.
	2.4. Produce suitable design diagrams for the solution.
3. Be able to devise a method to test the solution.	3.1. Devise input data to test the solution.
	3.2. Based on the original problem definition, define the results expected for the test data.
	3.3. Check the design against the test data/results.
4. Be able to produce a solution from the design.	4.1. Produce the solution using suitable techniques.
	4.2. Test the solution using the test plan.
	4.3. Document the solution in detail.

Access to HE Diploma Unit

Title:	JavaScript		
Unit Code:	QU034624		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
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 JavaScript can be used in a HTML document.	1.1. Explain the use of JavaScript within a HTML document.
2. Be able to use JavaScript in a HTML document.	2.1. Use JavaScript to prompt and validate inputs in a HTML document.
	2.2. Use the command document.write method to display messages in a HTML document.
	2.3. Alter, show, hide and move objects on a web page.
	2.4. Use JavaScript to adjust a HTML page for special effects.
3. Be able to use functions and variables.	3.1. Use functions and variables to customise web pages.
	3.2. Use functions and variables for functional web pages.
4. Be able to use event handlers to trigger JavaScript code.	4.1. Use event handlers to trigger JavaScript code.

Indicative Content:

AC 4.1: For example: onSelect, onSubmit, onClick, onMouseOver, onLoad, onUnload.

Access to HE Diploma Unit

Title:	Matrices		
Unit Code:	QU034630		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand the properties of determinants.	1.1. Explain the properties of determinants.
2. Be able to evaluate determinants.	2.1. Evaluate a linear set of equations using Cramer's Rule.
	2.2. Test that a set of equations is consistent.
	2.3. Solve a given problem involving consistency of a set of equations.
	2.4. Evaluate a determinant by using the properties of determinants.
3. Be able to use matrix operations.	3.1. Perform matrix arithmetic.
	3.2. Calculate the inverse of a matrix.
	3.3. Solve a set of linear equations using the determinant and inverse.
	3.4. Use the Gauss elimination method to solve a given problem.
	3.5. Determine the eigenvalues of a matrix.
	3.6. Determine the eigenvectors of a matrix.

Access to HE Diploma Unit

Title:	Mobile Games Development		
Unit Code:	QU034814		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand mobile technologies, platforms and interfaces.	1.1. Explain social and technological trends of mobile games and the impact they have on society.
	1.2. Explain how current and emerging mobile technologies impact the design and development of mobile based games.
	1.3. Describe the software used in the design and development of mobile games.
	1.4. Evaluate the global financial market for mobile based games.
2. Be able to design a 2D game for mobile devices.	2.1. Produce a design document for a 2D based mobile game using industry standard techniques that meet client requirements.
	2.2. Review the designs with others to identify and inform refinements.
3. Be able to develop a 2D game for mobile devices.	3.1. Develop a 2D game for a mobile device using industry standard software.
	3.2. Use appropriate data types and show how they are declared.
	3.3. Use appropriate selection and iteration methods for a game.
4. Be able to evaluate, test and deploy a 2D game for mobile devices.	4.1. Using a testing strategy, fully test a 2D game developed to meet a client's requirement.
	4.2. Evaluate and refine a 2D game based on testing.
	4.3. Deploy a 2D game to a mobile platform.

Access to HE Diploma Unit

Title:	Software Fundamentals - Object Oriented Programming		
Unit Code:	QU034654		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA
The learner will:		The learner can:
1. Understand how to design an object-oriented program.		1.1. Explain the data members of super-class and inherited classes required for a specified application.
		1.2. Explain the processing members (methods) for super-class and inherited classes required for a specified application.
2. Know how to create and compile an object-oriented program.		2.1. Develop super-class definitions and inherited classes containing both data and methods to documentation standards.
		2.2. Explain objects appropriate to a specified application.
		2.3. Develop executable code which the computer can run using language translation software.
		2.4. Analyse syntax error messages to edit and produce a successful compilation or runtime file.
3. Know how to test an object-oriented program.		3.1. Design a comprehensive test data plan and calculate expected results to test the program.
		3.2. Analyse the result of testing the program with expected results to determine whether program meets specification.
		3.3. Explain appropriate action carried out to correct program errors.

Access to HE Diploma Unit

Title:	Systems Analysis		
Unit Code:	QU034842		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Understand the Systems Development Life Cycle.		1.1.	Compare and contrast two systems' development life cycles.
		1.2.	Evaluate fact finding methods for a given model.
2. Be able to carry out investigation by using fact-finding techniques.		2.1.	Produce a context diagram.
		2.2.	Produce a level 1 Data Flow Diagram (DFD) by expanding the context diagram.
		2.3.	Decompose a level 1 DFD into a level 2 DFD.
3. Know the requirements of a feasibility study.		3.1.	Evaluate the features of a feasibility study.
		3.2.	Produce a comprehensive feasibility study for a given problem domain.

Access to HE Diploma Unit

Title:	The Ethics of Computing		
Unit Code:	QU034850		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to differentiate between ethical and unethical behaviour in computing.	1.1. Describe the principles of ethical behaviour in computing.
	1.2. Analyse the impact of computer technology on issues of: <ul style="list-style-type: none"> a) security b) privacy c) anonymity.
	1.3. Explain examples of unethical behaviour in computing and what is being done to minimise or stop it.
2. Know the key social issues in computing.	2.1. Discuss the key social issues in computing: <ul style="list-style-type: none"> a) the digital divide b) employee monitoring in the workplace c) health risks.
	2.2. Explain the concept of Green Computing and the strategies which help its implementation.
3. Understand how intellectual property rights affect the computing industry.	3.1. Using software and/or hardware examples, explain the three main types of intellectual property rights.
4. Understand the ethical considerations of emerging technology.	4.1. Describe the ethical considerations of emerging technologies for individuals, businesses and society.

Indicative Content:

AC 1.1: Description could include a set of moral guidelines, behaviours or code of conduct of how people should use computer technology and the ten commandments of computer ethics.

AC 1.2: Discussions could include reference to data protection, collection and storing of personal information, GDPR, network protection, hacking, cyber security, responsibilities of the individual, Data Privacy Act and Computer Misuse Act.

AC 1.3: Provide at least three examples of unethical behaviour. Could consider cyberbullying, trolling, software piracy, phishing, employees' use of equipment, leaking of sensitive information, abuse of privileged access, the distribution of misinformation or limiting access to information and freedom of information.

AC 2.1: Consider both positive and negative issues where applicable.

- Digital Divide - could consider UK-wide or global, rural or urban, financial issues, or roll out of fibre broadband, education, political. Could consider access to laptop, tablet or mobile phone technology as part discussions.
- Employee monitoring – could consider keylogging, screen video and capture, GPS tracking, time tracking, file tracking, email and phone monitoring, GDPR and Data Privacy Act legislation, CCTV, biometrics.
- Health risks – time spent sat at a desk, ergonomics, eyesight, use of technology to track and provide exercise/movement.

AC 2.2: Consider energy consumption, environmental waste, consumables, hazardous substances, life cycle of hardware. Consider what manufacturers can do, what businesses and organisations can do and what individuals can do.

AC 3.1: Include discussions on the use of patents, copyright and trademarks in the context of software and/or hardware.

AC 4.1: Consider the rise of artificial intelligence, virtual reality, wearable technologies, big data, activity monitoring and machine learning.

Access to HE Diploma Unit

Title:	Trigonometry		
Unit Code:	QU034678		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA
The learner will:		The learner can:
1. Understand trigonometric identities.		1.1. Explain a basic trigonometric identity.
2. Be able to solve problems using trigonometric functions.		2.1. Solve problems using Pythagoras' theorem.
		2.2. Solve problems involving sine, cosine and tangent.
		2.3. Solve problems involving angles of elevation or depression.
		2.4. Solve problems involving 3D shapes.
		2.5. Solve problems involving the sine rule.
		2.6. Solve problems involving the cosine rule.
3. Be able to prove trigonometric identities and solve equations.		2.7. Solve problems involving circular functions.
		3.1. Prove a trigonometric identity.
		3.2. Solve a trigonometric equation.

Access to HE Diploma Unit

Title:	Understanding Robots and Control Systems		
Unit Code:	QU034858		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA
The learner will:	The learner can:	
1. Be able to analyse the effectiveness of different types of robotic devices and how they are used to complete routine tasks.	1.1.	Compare and contrast different types of robotic devices, explaining their uses.
	1.2.	Explain how different sensors are used to control a robot.
	1.3.	Analyse the strengths and weaknesses of using a robot to complete routine tasks: <ul style="list-style-type: none"> • in the home • in manufacturing industry • in medical applications • agricultural environments.
2. Understand legal and ethical issues related to the use of robots.	2.1.	Identify legislation and guidance which is relevant to the development and use of robots and control systems.
	2.2.	Discuss ethical issues which should be considered in the development and use of robots and control systems.
3. Understand how to design and create a robot and control system.	3.1.	Describe equipment required to create a robot and control system.
	3.2.	Discuss design tools which can be used to design a robot and control system.
	3.3.	Explain the importance of creating a test plan for the robot and control system.

Access to HE Diploma Unit

Title:	User Experience (UX) 3D Design Project		
Unit Code:	QU034860		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Know about the inherent qualities and physical properties of a range of media and materials used in 3D design to create an end product that meets the user experience requirements of a specific brief.	1.1. Identify the qualities and properties of a range of materials used in 3D design.
	1.2. Explain how the 3D media and materials may be used to create an end product which meets UX design brief requirements.
	1.3. Explain construction techniques used when using 3D media.
2. Be able to select appropriate 3D techniques to produce a final outcome to meet the UX design brief requirements.	2.1. Develop user personas and justify their importance in a user experience design project.
	2.2. Identify materials to be used to produce a specific outcome.
	2.3. Justify choice of materials to be used to produce a specific outcome.
	2.4. Select processes and media to be used to produce the specific outcome, justifying choices.
3. Be able to develop aesthetic and technical awareness of design.	3.1. Use primary and secondary resources to research contemporary and historical design.
	3.2. Evaluate the effectiveness of the sources in supporting the development of own design ideas.
	3.3. Examine the role of emotion and social interactions in user experience design.

<p>4. Be able to develop work in both 2D and 3D to produce a final outcome, utilising a range of sources and materials.</p>	<p>4.1. Assess a range of sources which can be utilised to develop ideas both in 2D and 3D.</p>
	<p>4.2. Develop ideas in both 2D and 3D based on the research undertaken.</p>
	<p>4.3. Produce a final outcome using a variety of materials.</p>

Access to HE Diploma Unit

Title:	Website Design and Development		
Unit Code:	QU034690		
Unit Level:	Level 3	Credit Value:	6
Grading Type:	Graded		
Academic Subject Content/Other:	Academic Subject Content		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Know how to use HTML basic tags.	1.1. Explain HTML basics.
	1.2. Format HTML document using paragraph, page break, centre, spaces and blinking, ordered lists and unordered list.
	1.3. Use HTML hyperlinks to navigate between webpages and external links.
	1.4. Use CSS in the website and analyse how the use of Cascading Style Sheets (CSS) can improve the look of a website.
2. Be able to design an interactive website.	2.1. Explain the specific purpose and requirements for a website.
	2.2. Design a multi-page website to meet stated requirements.
	2.3. Evaluate two different designs created to meet a particular specification and justify the one chosen for implementation.
3. Be able to create and test an Interactive website using HTML and CSS.	3.1. Build a functional multi-page interactive website comprising a complex set of linked web pages including dynamic web pages.
	3.2. Review and test the website produced to assess how closely the site matches the original specification and whether it meets the requirements.
	3.3. Improve the effectiveness of a website on the basis of the testing.
	3.4. Explain the tools and techniques used in the creation of a website.

4. Understand the factors and constraints that related to production and performance of website.	4.1. Explain the various factors that influence the performance of a website.
	4.2. Discuss the potential security issues and legal constraints involved in a particular website.

Indicative Content:

AC 1.2: This could also be achieved by formatting the HTML document using paragraphs, headings, line breaks, divisions, images and ordered and unordered lists, appropriate to the software that is being used.

Mandatory Units: Ungraded

Access to HE Diploma Unit

Title:	Preparation for Higher Education		
Unit Code:	QU034710		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to 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. Be able to complete 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, achievements and goals, communicating these clearly in a personal statement.
3. Be able to prepare 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 use of previous experience and recent study.
4. Be able to plan and prepare for the transition to Higher Education.	4.1. Analyse the personal and academic qualities needed for successful study in Higher Education.

	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.

Optional Units: Ungraded

Access to HE Diploma Unit

Title:	Academic Writing Skills		
Unit Code:	QU034692		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to analyse a specific question in the context of a particular subject area.	1.1. Interpret the meaning and implications of the specific question.
	1.2. Identify terms and concepts relevant to an understanding of the specific question.
2. Be able to produce a written response in an appropriate format.	2.1. Devise a detailed plan for a written response to the specific question.
	2.2. Use the plan to write a coherent and logical response to the specific question.
	2.3. Present the response in an appropriate format.
3. Be able to use language, style and conventions appropriate to academic writing.	3.1. Write accurately following accepted written language conventions.
	3.2. Use appropriate style and register showing an awareness of audience.
	3.3. Use accurately a standard form of referencing reflecting a range of sources.

Access to HE Diploma Unit

Title:	Application of Number - Interpreting and Presenting Information		
Unit Code:	QU034694		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 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.
	1.2.	Justify the choice of data collection procedures giving reasons for choosing a particular sample and methods used.
	1.3.	Justify the chosen methods of recording data.
	1.4.	Interpret the main characteristics of the data in relation to the task.
2. Be able to present mathematical and statistical data.	2.1.	Use a range of appropriate and effective techniques to present accurately.
	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.
3. Be able to evaluate how errors can be made when collecting and recording data.	3.1.	Evaluate actual or possible sources of error in collecting and recording data.
	3.2.	Check answers using alternative methods of calculation.

Access to HE Diploma Unit

Title:	Communication - Speaking and Listening		
Unit Code:	QU034696		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA
The learner will:		The learner can:
1. Be able to give a short presentation about a straightforward 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 relevant supporting material to illustrate presentation.
		1.4. Respond sensitively to questions from the audience.
2. Be able to 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 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.

<p>3. Be able to reflect on own performance in presentations and discussions.</p>	<p>3.1. Reflect on own performance: a) in the presentation b) in the discussion.</p>
	<p>3.2. Identify areas for improvement in speaking and listening activities.</p>

Access to HE Diploma Unit

Title:	Complex Numbers		
Unit Code:	QU034698		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to tackle problems involving complex numbers.	1.1. Add and subtract complex numbers.
	1.2. Multiply two complex numbers.
	1.3. Divide by a complex number.
	1.4. Solve equations involving imaginary numbers.
	1.5. Find the complex roots of a quadratic equation.
2. Understand Argand diagrams.	2.1. Explain how an Argand diagram is used.
3. Be able to solve problems using an Argand diagram.	3.1. Represent complex numbers on an Argand diagram.
	3.2. Find the modulus of a complex number.
	3.3. Find the argument of a complex number.
	3.4. Convert a complex number written in Cartesian coordinates (x, y) into polar coordinates (r, θ) .

Access to HE Diploma Unit

Title:	Computer Data Protection		
Unit Code:	QU034700		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Be able to analyse the application of current UK legislation relating to the use and protection of data.		1.1.	Explain the purpose of legislation related to data protection.
		1.2.	Explain current legislation relating to the use and protection of data when using computers.
2. Understand the need for control of data to ensure that it is accurate and secure.		2.1.	Explain the need for control of data to ensure that it is accurate and secure.
		2.2.	Use examples to examine when data should or should not be controlled.
3. Be able to analyse how data protection legislation is applied in different contexts.		3.1.	Analyse examples of the application of current data protection legislation in: a) a work context b) a study context.

Access to HE Diploma Unit

Title:	Developing Professional Attributes		
Unit Code:	QU034702		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Be able to evaluate differences between positive and negative professional attributes.		1.1.	Evaluate both positive and negative professional attributes.
		1.2.	Link positive attributes to the role of a professional.
2. Be able to reflect on own professional attributes and areas for development.		2.1.	Produce a SWOT analysis of own professional attributes.
		2.2.	Evaluate SWOT analysis.
		2.3.	Produce an individual professional development plan linked to the SWOT analysis.
3. Be able to analyse which attributes are considered important by employers in a specific sector and are valued in the workplace.		3.1.	Analyse which professional attributes are valued highly by employers within a specific sector.
		3.2.	Analyse why these professional attributes are important in a sector-specific workplace.
4. Be able to analyse the link between professional attributes and emotional intelligence.		4.1.	Analyse the links between professional attributes and emotional intelligence.

Access to HE Diploma Unit

Title:	Inclusivity and Disability		
Unit Code:	QU034704		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Understand definitions of disability and everyday use of terminology related to disability.		1.1. Summarise definitions of disability and everyday use of terminology related to disability.	
		1.2. Compare medical and social models of disability.	
2. Be able to evaluate theoretical approaches and assumptions that underpin definitions of disability.		2.1. Evaluate the theoretical approaches and assumptions that underpin definitions of disability.	
3. Understand features of disability according to social class, gender, age and ethnicity.		3.1. Explain features of disability according to social class, gender, age and ethnicity.	
4. Understand legislation designed to support those with disability.		4.1. Summarise legislation related to disability.	

Access to HE Diploma Unit

Title:	Mathematics - Calculations		
Unit Code:	QU034706		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to tackle problems involving numbers.	1.1. Apply the four number rules to numbers including decimals and fractions within multistage problems.
	1.2. Use positive and negative numbers in a practical context.
	1.3. Convert numbers within and across unit systems within multi-stage tasks.
	1.4. Calculate answers using: <ul style="list-style-type: none"> a) percentages and reverse percentages b) ratio, direct and inverse proportion c) given formulae d) perimeters, areas and volumes of complex shapes e) powers and roots f) common units of measurement.
2. Be able to explain the methods of calculations and processes used.	2.1. Summarise the method of calculation and the processes used.
	2.2. Explain the importance of carrying out processes in a suitable order to a degree of accuracy appropriate to the task.
3. Know how to use estimation and check results.	3.1. Use procedures including estimation to check results.
	3.2. Evaluate the effects of accumulating errors in calculations.
	3.3. Explain the upper and lower bounds of accuracy for given results.

Access to HE Diploma Unit

Title:	Optimising Examination Performance		
Unit Code:	QU034708		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to effectively prepare for an examination.	1.1. Produce an effective and realistic preparation plan.
	1.2. Identify priorities in the preparation plan.
	1.3. Reflect on the plan's effectiveness to identify future improvements.
2. Be able to complete competent answers, which demonstrate subject knowledge.	2.1. Follow all instructions accurately to complete the correct number and combination of questions.
	2.2. Include the salient aspects in answers, with the accuracy and detail required by the subject.
	2.3. Show in answers an in-depth understanding of the arguments/problems, as required by the subject.
	2.4. Apply knowledge or learning coherently in support of arguments and/or to resolve problems.
3. Know 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

Title:	Presentation Skills		
Unit Code:	QU034712		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Know how to develop and plan a structured presentation.		1.1. Plan a timed presentation.	
		1.2. Develop the structure for a presentation.	
2. Know how to conduct research for a presentation from a range of different sources.		2.1. Identify topic and aims of research.	
		2.2. Select relevant resources from different sources.	
		2.3. Select information pertinent to the topic.	
3. Be able 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. Use audio-visual aids effectively relevant to the topic.	
		3.3. Use eye contact and body language suitable for the audience.	
		3.4. Respond effectively to questions and challenges.	
4. Be able to evaluate own skills and performance.		4.1. Evaluate own presentation analysing strengths and areas to develop.	
		4.2. Evaluate own delivery of the presentation.	
		4.3. Evaluate strategies for improvement.	

Access to HE Diploma Unit

Title:	Presenting Information Using ICT		
Unit Code:	QU034714		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA
The learner will:		The learner can:
1. Be able to analyse 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.
		3.2. Present information to meet a specific brief.
		3.3. Save information in a structured format so it can be found easily and justify choice.

Access to HE Diploma Unit

Title:	Problem Solving in the Workplace		
Unit Code:	QU034716		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Understand factors that may influence problem-solving in the workplace.		1.1. Explain factors which influence the choice of solution for problems.	
2. Know how to solve problems in the workplace.		2.1. Analyse the nature of specific workplace problems.	
		2.2. Explain the actions that need to be taken to solve the workplace problems.	
		2.3. Analyse the potential consequences and impact of proposed actions.	
3. Be able to apply solutions to workplace problems.		3.1. Select preferred solution to workplace problems.	
		3.2. Justify the choice of solution.	

Access to HE Diploma Unit

Title:	Professional Interpersonal Behaviours		
Unit Code:	QU034718		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1.	Be able to analyse how verbal and non-verbal communication is used in a professional interpersonal interaction.	1.1.	Analyse the verbal and non-verbal skills used in a range of contexts within a given profession.
2.	Understand the importance of an awareness of cultural diversity for a given profession.	2.1.	Explain the importance of an awareness of cultural diversity across a range of contexts for a given profession.
3.	Be able to evaluate own interpersonal skills, analysing strengths and areas to develop.	3.1.	Evaluate own interpersonal skills, analysing strengths and areas to develop.
		3.2.	Evaluate ways of addressing areas to develop.

Access to HE Diploma Unit

Title:	Promoting Wellbeing and Building Resilience		
Unit Code:	QU034720		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1.	Understand the physical and psychological impact of pressure and stress on mental wellbeing.	1.1.	Explain the physical and psychological impact of pressure and stress on mental wellbeing.
2.	Be able to analyse 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.	Be able to explore 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.
		4.2.	Analyse the types of support available from different sources.

Access to HE Diploma Unit

Title:	References and Reliability of Sources		
Unit Code:	QU034722		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

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

Access to HE Diploma Unit

Title:	Relational Database		
Unit Code:	QU034724		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Understand database design.	1.1. Explain the normalisation process in the design of a database.
2. Be able to identify the data structure to hold information in a database.	2.1. Create tables and establish relationships between them.
	2.2. Design a data entry form.
3. Be able to process information in a database.	3.1. Create queries to combine data from multiple tables.
	3.2. Perform calculations based on information in queries.
	3.3. Display information from tables on a form.
4. Be able to present database information in reports.	4.1. Create menu and sub-menu reports for a database and attach actions to them.

Access to HE Diploma Unit

Title:	Spreadsheets		
Unit Code:	QU034726		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 7 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Know how to design and store a spreadsheet.	1.1. Design a spreadsheet appropriate to a user's requirements.
	1.2. Create and store the spreadsheet.
	1.3. Evaluate the spreadsheet in terms of meeting the user's needs.
2. Be able to retrieve and modify an existing spreadsheet.	2.1. Modify the spreadsheet design/content in response to user feedback.
3. Be able 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. Be able to use spreadsheet functions.	5.1. Develop a spreadsheet solution using a range of mathematical functions.
6. Be able to use 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:	Statistics		
Unit Code:	QU034728		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Be able to illustrate statistical data.		1.1.	Construct a cumulative frequency curve.
		1.2.	Construct a histogram.
2. Know how to perform statistical calculations.		2.1.	Calculate the median from a cumulative frequency curve.
		2.2.	Calculate the lower quartile from a cumulative frequency curve.
		2.3.	Calculate the upper quartile from a cumulative frequency curve.
		2.4.	Using a histogram calculate the median.
		2.5.	Using a histogram calculate the mode.
3. Be able to perform calculations using grouped data.		3.1.	Calculate the mean.
		3.2.	Calculate the variance.
		3.3.	Calculate the standard deviation.
4. Be able to perform correlation calculations.		4.1.	Calculate the product-moment coefficient.
		4.2.	Calculate the rank correlation coefficient.

Access to HE Diploma Unit

Title:	Study Skills for Higher Education		
Unit Code:	QU034730		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Be able to manage and organise own study time.		1.1.	Produce a personal schedule of study to accommodate own time constraints.
		1.2.	Devise a strategy for prioritising and organising coursework to meet deadlines.
2. Know how to prepare for exams effectively.		2.1.	Prepare a revision timetable for exams.
		2.2.	Evaluate strategies to support effective revision based on own learning preferences.
3. Be able to retrieve information from reliable sources.		3.1.	Retrieve information from a range of reliable written sources using a range of reading skills.
		3.2.	Scan source material, evaluating information to create accurate and detailed notes to suit purpose.
		3.3.	Demonstrate the use of a recognised referencing system for retrieved information.
4. Be able to present information using a range of approaches.		4.1.	Present information using different formats for academic purposes.

Access to HE Diploma Unit

Title:	Sustainability Project		
Unit Code:	QU034732		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 3 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to plan a project to promote sustainability within a specific sector.	1.1. Identify a project to promote sustainability within a chosen sector, justifying choice.
	1.2. Produce a project plan for own project including: <ul style="list-style-type: none"> • Aims and objectives • Ethical considerations • Timescales • 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 aims and objectives.

Access to HE Diploma Unit

Title:	The Fundamentals of Environmental Sustainability		
Unit Code:	QU034734		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 4 learning outcomes.

LEARNING OUTCOMES		ASSESSMENT CRITERIA	
The learner will:		The learner can:	
1. Understand the 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

Title:	Writing Reports		
Unit Code:	QU034736		
Unit Level:	Level 3	Credit Value:	3
Grading Type:	Ungraded		
Academic Subject Content/Other:	Other		
Assessment Details:	Refer to Assessment Grid		

This unit has 5 learning outcomes.

LEARNING OUTCOMES	ASSESSMENT CRITERIA
The learner will:	The learner can:
1. Be able to use the report title to determine 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. Be able to use the conventions for acknowledging sources.	5.1. Acknowledge the work of other authors both during the report and in a list of references.
	5.2. Use recognised approaches for acknowledging sources.

7. What to Do Next

For existing Providers, please contact your named Development Manager.

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

Tel: 01206 911211

Email: enquiries@gatewayqualifications.org.uk

8. Gateway Qualifications

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