ACADEMIC PARTNERSHIPS PROGRAMME QUALITY HANDBOOK 2026-2027

Higher National Diploma

Applied Computing (Network Engineer HTQ)
Applied Computing (Cyber Security Practitioner)
Applied Computing (Software Developer HTQ)
Including HNC pathway to HND

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Welcome and Introduction

Welcome to the: HND Applied Computing delivered by Exeter College, in Exeter Devon.

Distinctive Features of this Programme and the Student Experience

- Small group sizes in a supportive environment
- Opportunities to gain Microsoft Technical Associate qualifications alongside the programme
- Access to Computer Lab and high specification computer rooms for teaching and learning
- Employer responsive curriculum supported by employer mentoring programme
- City based location creates opportunities for access to cutting edge technology and big data sources
- HNC and HND Study Business Intelligence supported by local agencies and employers to provide students opportunities to work with live data
- HND Specialist curriculum focus on Cyber Security and Cloud Technologies
- Staff actively engaged in industry supported by wider ongoing CPD
- HNC Progression route onto HND with further progression opportunities onto a relevant BSc (Hons) at the University Plymouth
- Progression agreement to BSc (Hons) Computing with the University of Plymouth • Exeter College is part of the South West Institute of Technology programme (SWIoT). This is a government sponsored regional development programme, which has resulted in significant additional investment in Exeter College, to support regional developments
- Exeter College Institute of Technology – a purpose built IT educational facility.

Programme development, employer and university collaboration

- This programme was designed in consultation with local employers. It also incorporates elements from a review (2020 and 2021) of the immediate and future needs of the regional workforce, improving the employment prospects of our students.
- Work based learning is an integral part of the programme. A required project develops an understanding of the needs of businesses dependent upon IT. This also develops the soft skills that businesses demand of employees.
- Working with the University of Plymouth, we have ensured that progression both within and from the programmes can lead to regional employment or onto a BSc Computing Programme at Plymouth. In addition, progression to other specialist universities is possible. Previous students from Exeter College have achieved success academically and in employment.

This programme has been designed to equip you with the skills and knowledge base required to work in your chosen specialism or other graduate opportunities. It is also a platform from which you can undertake additional vocational and academic qualifications.

This Programme Quality handbook contains important information including:

- The approved programme specification
- Module records

Higher Technical Qualifications

There are currently huge skills gaps in many vital areas of the economy, meaning employers need people with technical skills more than ever. Higher Technical Qualifications, or HTQs, are technical qualifications in England at level 4 and 5 that have been quality marked by the Institute for Apprenticeships & Technical Education (IfATE) to indicate their alignment to employer-led occupational standards. Look for the quality mark



This course has been developed in collaboration with employers, and is mapped to the Knowledge, Skills and Behaviours (KSB's) of the following Occupational Standard to offer the right training and skills for workplace success.

HND Applied Computing(Network Engineer) pathway is mapped to the Occupational Standard for Network Engineer. Full details of the standard and the additional KSB's you will gain through your programme, if you follow this pathway, can be found on the IfATE website. Network engineer / Institute for Apprenticeships and Technical Education

This occupation is found in large and small businesses, in all sectors, and within public, private, and voluntary organisations. Network Engineers are a key occupation in most organisations which are increasingly dependent on their digital networks.
The demand for people who can manage, build, maintain virtual and physical networks is increasing. This is because of technological developments such as, 5G and Cloud. The broad purpose of the occupation is to install computer networks, maintain them, and offer technical support to users where necessary.

Note: The information in this handbook should be read in conjunction with the current edition of:

- Your University Student Institution Handbook, which contains student support-based information on issues such as finance and studying at HE available on Moodle
- Your Module Guide available on Moodle
- Your University of Plymouth Student Handbook available at: https://www.plymouth.ac.uk/your-university/governance/student-handbook

Programme Specification

1. HNC/HND

Final award title Higher National Diploma Applied Computing
Intermediate award Higher National Certificate Applied Computing

UCAS code: I099

HECOS: 100366 Computer Sciences

2. Awarding Institution: University of Plymouth

Teaching institution(s): Exeter College

3. Accrediting body(ies) N/A

4. Distinctive Features of the Programme and the Student Experience

- Small group sizes in a supportive environment
- Opportunities to gain vendor qualifications, such as Microsoft Technical Associate, Cisco, and Amazon Web Services certification alongside the programme
- Access to Computer Lab and high specification computer rooms for teaching and learning in new £10m IoT building
- Specialist pathways including Cyber Security, SW Dev Ops and Networking
- Employer responsive curriculum, supported by employer mentoring programme, including specialist HTQ pathways in Networking (approved), Cybersecurity (Subject to confirmation), DevOps - Software Development (Subject to confirmation)
- City based location creates opportunities for access to cutting edge technology and big data sources
- Study Business Intelligence supported by local agencies and employers to provide students opportunities to work with live data
- Staff actively engaged in industry supported by wider ongoing CPD
- Each pathway will have the ability to top-up to any of the University of Plymouth Computing qualifications (BSc (Hons) Computer Science, BSc (Hons) Computing and Software Development, BSc (Hons) Games Development Technologies and BSc (Hons) Cyber Security) with appropriate IAG from teaching team. Due to development of knowledge, skills and behaviours expected within the relevant occupational standards students will be able to enter into employment.
- Exeter College is part of the Southwest Institute of Technology programme (SWIoT). This is a government sponsored regional development programme, which has resulted in significant additional investment in Exeter College, to support regional developments.

5. Relevant QAA Subject Benchmark Group(s)

- Computing QAA Subject Benchmark Statement February 2016

6. Programme Structure – Full Time Options - (Please note – pathways are subject to review before the commencement of each academic year).

HND Applied Computing (Network Engineer) - Full Time Option:

	Module Code[1]	Module Title	Credits	Trimester	Compensatable
Year 1	EXCE1157	Computational Thinking	20	1	Y
	EXCE1161	Software Development	20	1	Y
	EXCE1159	Databases & Information Systems	20	2	Y
	EXCE1160	Business Intelligence & Big Data	20	2	Y
	EXCE1158	Computer Systems & Control	20	3	Y
	EXCE1162	Fundamentals of Computer Networking	20	3	Y
Year 2	EXCE2027	Servers & Cloud Computing	20	1	Y
	EXCE2028	Artificial Intelligence	20	1	Y
	EXCE2029	Cyber Security	20	2	Y
	EXCE2032	Website Development	20	2	Y
	EXCE2030	Object Oriented Programming	20	3	Y
	EXCE2031	Workplace Learning	20	3	Y

***HND Applied Computing (Cyber Security Practitioner) - Full Time Option:**

	Module Code[2]	Module Title	Credits	Trimester	Compensatable
Year 1	EXCE1157	Computational Thinking	20	1	Y
	EXCE1161	Software Development	20	1	Y
	EXCE1159	Databases & Information Systems	20	2	Y
	EXCE1160	Business Intelligence & Big Data	20	2	Y
	EXCE1158	Computer Systems & Control	20	3	Y
	EXCE1162	Fundamentals of Computer Networking	20	3	Y
Year 2	EXCE2027	Servers & Cloud Computing	20	1	Y
	EXCE2028	Artificial Intelligence	20	1	Y
	EXCE2029	Cyber Security	20	2	Y
	EXCE2032	Website development	20	2	Y
	EXCE2031	Workplace Learning	20	3	Y
	EXCE 2033	Penetration Testing	20	3	Y

HND Applied Computing (Software Developer) - Full Time Option:

	Module Code[3]	Module Title	Credits	Trimester	Compensatable
Year 1	EXCE1157	Computational Thinking	20	1	Y
	EXCE1161	Software Development	20	1	Y
	EXCE1159	Databases & Information Systems	20	2	Y
	EXCE1160	Business Intelligence & Big Data	20	2	Y
	EXCE1158	Computer Systems & Control	20	3	Y
	EXCE1162	Fundamentals of Computer Networking	20	3	Y
Year 2	EXCE2027	Servers & Cloud Computing	20	1	Y
	EXCE2028	Artificial Intelligence	20	1	Y
	EXCE2034	Software Development and IT Operations	20	2	Y
	EXCE2032	Website development	20	2	Y
	EXCE2030	Object Oriented Programming	20	3	Y
	EXCE2031	Workplace Learning	20	3	Y

Part Time Option:

	Module Code[4]	Module Title	Credits	Trimester	Compensatable
Year 1	EXCE1157	Computational Thinking	20	1	Y
	EXCE1159	Databases & Information Systems	20	2	Y
	EXCE1158	Computer Systems & Control	20	3	Y
Year 2	EXCE1161	Software Development	20	1	Y
	EXCE1160	Business Intelligence & Big Data	20	2	Y
	EXCE1162	Fundamentals of Computer Networking	20	3	Y
Year 3	EXCE2027	Servers & Cloud Computing	20	1	Y
	EXCE2032	Website Development	20	2	Y
	EXCE2030	Object Oriented Programming	20	3	Y
Year 4	EXCE2028	Artificial Intelligence	20	1	Y
	EXCE2029	Cyber Security	20	2	Y
	EXCE2031	Workplace Learning	20	3	Y

7. Programme Aims

The aims of the course are:

1. To develop insight and understanding of computing eco-systems, allowing specialist pathways to be followed to equip students with the relevant skills to respond to the opportunities and challenges presented on a local to global level.

2. To facilitate work-based opportunities for students to develop the skills, techniques, and personal attributes essential for successful working lives.

3. To provide students with current required employment sector skills.

4. To equip students to enter or progress in employment in computing, or higher education qualifications such as an Honours degree in computing or a related area.

8. Programme Intended Learning Outcomes

8.1. Knowledge and understanding

On successful completion graduates should have developed knowledge and understanding of:

1. Underlying theoretical concepts and principles of computing

2. How to synthesise coding, networking, data analysis and security solutions

3. The value of computing data, processes, and security to the wider industry

8.2. Cognitive and intellectual skills

On successful completion graduates should have developed:

1. The ability to interpret and evaluate data, e.g., pattern recognition, to inform and develop lines of argument

2. How to process information and use cognitive adaptability to find appropriate solutions to problems

3. The analytical and evaluative skills required of a reflective practitioner

8.3. Key and transferable skills

On successful completion graduates should have developed the ability to:

1. Apply the moral principles of Computer Ethics to further study and/or the workplace

2. Apply appropriate tools/methods to create effective solutions to problems

3. Communicate effectively in a variety of formats appropriate to the situation, including critical evaluation and as part of a team

8.4. Employment related skills

On successful completion graduates should have developed:

1. Enhanced employment specific qualities and skills for modern workplace.

2. Group working skills, producing, and cooperating as required in a modern setting

3. The ability to apply project management methodologies in a professional setting

8.5. Practical skills

On successful completion graduates should have developed:

1. The ability to plan and design solutions to a variety of problems

2. The skills to produce solutions to meet user specification

3. The ability to test, evaluate and refine work using recognised subject standards

9. Admissions Criteria, including APCL, APEL and Disability Service arrangements

Entry Requirements for HND Applied Computing, for all pathways	
GCSE	Maths and English at Grade 4/C or above
A-level/AS-level	Minimum entry requirement is 64 UCAS points
BTEC National Diploma/QCF Extended Diploma	Minimum grade of MPP which is equivalent to 64 UCAS points from a Computing or Maths subject
Access to Higher Education at level 3	Access to HE Diploma with a minimum Pass grade overall from a Computing or Maths subject
HNC Applied Computing, including other IT HNCs	Pass grade overall, subject to a check that where other HNCs are the route, that they provide sufficient grounding for success
T Levels	Pass in a computing related subject
Apprenticeships	Level 3 apprenticeship pass in associated subject
Welsh Baccalaureate	Minimum grade C, at level 3 including a Computing or Maths subject
Scottish Qualifications Authority	National Certificate or Scottish Highers with equivalent to 64 UCAS points in Computing or Maths based subject
Irish Leaving Certificate	64 UCAS points from a minimum of 3 Higher Level grades including Computing or Maths subject
APEL / APCL possibilities	Prior experience within the industry or partial completion of other relevant level 4/5 qualifications will be considered on an individual basis
Disclosure and Barring Service Required	None required
Disability Service Arrangements	The Disabled Students Allowance (DSA) advisor will support your application and assessment of needs. Upon receipt of your Needs Assessment, all reasonable adjustments and support will be put in place to support your studies. In addition, there is a counsellor on campus with whom appointments can be made directly.

10. Progression Routes

The progression route to the University of Plymouth will be to top-up to any of the University of Plymouth Computing qualifications (BSc (Hons) Computer Science, BSc (Hons) Computing and Software Development, BSc (Hons) Games Development Technologies and BSc (Hons) Cyber Security) with appropriate IAG from teaching team

11. Non-Standard Regulations

N/A

12. Transitional Arrangements

N/A

Appendices

- Programme Specification Mapping (UG) – core/elective modules

Appendix 1: Programme Specification Mapping (UG): module contribution to the meeting of Award Learning Outcomes.

Core Modules		Award Learning Outcomes contributed to (for more information see Section 8)															Compensation Y/N	Assessment Element(s) and weightings [use KIS definition] E1- exam E2 – clinical exam T1- test C1- coursework A1 – generic assessment P1 - practical
		Knowledge & understanding			Cognitive & intellectual skills			Key & transferable skills			Employment related skills			Practical skills				
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
Level 4	**EXCE1157**	X		X	X	X			X	X							Y	C1 – 50% T1 – 50%
	EXCE1158	X			X	X			X	X				X		X	Y	C1 – 50% P1 – 50%
	EXCE1159		X		X	X		X	X					X	X	X	Y	C1 – 80% T1 – 20%
	EXCE1160		X	X	X			X				X		X	X		Y	C1 – 100%
	EXCE1161		X		X	X					X	X		X	X		Y	C1 – 100%
	EXCE1162	X	X		X						X			X			Y	P1 – 60% T1 – 40%
Level 4 LOs																		
Level 5	**EXCE2027**	X		X					X		X	X	X				Y	C1 – 50% P1 – 50%
	EXCE2028				X	X		X	X		X						Y	C1 – 50% P1 – 50%
	EXCE2029	X	X	X				X	X	X				X			Y	C1 – 60% T1 – 40%
	EXCE2030	X			X	X	X	X	X					X	X	X	Y	C1 – 100%
	EXCE2031					X	X	X		X	X	X	X		X		Y	C1 – 100%
	EXCE2032		X						X	X			X	X	X	X	Y	C1 – 50% P1 – 50%
	EXCE2033	X	X		X	X	X			X				X	X	X	Y	C1 – 60% T1 – 40%
	EXCE2034	X	X	X				X	X	X				X			Y	C1 – 100%
Level 5 LOs																		

CORE MODULES: tick those Award Learning Outcomes the module contributes to through its assessed learning outcomes.

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE1157 **MODULE TITLE:** Computational Thinking

CREDITS: 20 **FHEQ LEVEL:** 4 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module covers the basic mathematical concepts that underpin much of computing practice. It is designed to be a practitioner's guide, emphasising the practical application and implications of the theory.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	50%	**C1** (Coursework)	50%	**P1 (**Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To introduce number theory in practical computing scenarios.
- To examine simple probability theory and probability distributions.
- To examine graphical solutions using geometry and vector methods
- To implement matrix methods to contextualised examples relevant to computing
- To introduce abstract data types, concrete data structures and algorithms

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Demonstrate an understanding of how applied number theory can impact practical computing scenarios and how to communicate in a method appropriate to the scenario and audience.	8.1.1, 8.3.3
2. Analyse events using probability theory and probability distributions, applying this to business activities and decision making.	8.1.3
3. Demonstrate the application in graphical examples using geometry and vector methods in applications.	8.2.1
4. Use, apply and evaluate abstract data types, and matrix manipulation methods, concrete data structures and algorithms	8.2.2, 8.3.2

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2020	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**TRIMESTER: 1**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/publications/information-andhttp://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subjecthttp://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspxbenchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/qualityhttp://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspxcode/Pages/default.aspx

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2025-26 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Adam Clement **OTHER MODULE STAFF:** None

Summary of Module Content

Number theory: Converting between number bases (Denary, Binary, Octal, Duodecimal and Hexadecimal). Prime numbers, Pythagorean triples and Mersenne primes. Greatest common divisors and least common multiples. Modular arithmetic operations. Sequences and series: Expressing a sequence recursively. Arithmetic and geometric progression theory and application. Summation of series and the sum to infinity
Probability theory: Calculating conditional probability from independent trials. Random variables and the expectation of events. Applying probability calculations to hashing and load balancing.
Probability distributions: Discrete probability distribution of the binomial distribution. Continuous probability distribution of the normal (Gaussian) distribution.
Geometry: Cartesian co-ordinate systems in two dimensions. Representing lines and simple shapes using co-ordinates. The co-ordinate system used in programming output device. Vectors: Introducing vector concepts. Cartesian and polar representations of a vector. Scaling shapes described by vector co-ordinates.
Introduction to matrices and matrix notation: Using matrices to represent ordered data and the relationship with program variable arrays. The process for addition, subtraction and multiplication of matrices. Calculating the determinant and inverse of a matrix. Application of matrices to vector transformations and rotation, maps and graphs.
Data structures: Array; set; stack; queue; list; tree; types e.g., active, passive, recursive.
Algorithm types: Recursive, backtracking, dynamic, divide & conquer, branch & bound, greedy, randomised, brute force.
Algorithms: Sort; insertion, quick, merge, heap, bucket, selection; search linear, binary, binary

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	25	Delivery of module content by the lecturer in Computing lab with engagement from learners
Practical Classes and Workshops	20	Time spent in the computer labs/classrooms
Guided Independent Study	155	Students expected to develop mathematical and logic skills
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Test	Timed in class assessment 1.5 hr using relevant data methods (LO3,4,5)	100%
Coursework	Report on computational theory (LO1,2)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework (in lieu of the original assessment)	Report on data methods with calculations	100%
Coursework	Report on computational theory	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Adam Clement Date: September 2025	**Approved by**: Chris Morris Date: September 2025

Recommended Texts and Sources:

The Art of Statistics: How to Learn from Data by David Spiegelhalter 2019

Foundation Mathematics for Computer Science: A Visual Approach Paperback – 14 Sep 2015 by John Vince 2015, Springer

Schaum's Outline of Essential Computer Mathematics (Schaum's Outline Series) Paperback – 16 May
1982
by Seymour Lipschutz

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE1158 **MODULE TITLE:** Computer Systems & Control
CREDITS: 20 **FHEQ LEVEL:** 4 **HECOS CODE:** 100367 Computer and Information Technology
PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
Introduces the hardware components of modern systems, linked to logic, low level programming and simple control mechanisms. This module will identify and detail the essential components of a processor-based system, applying them to simple physical control systems using appropriate languages and a range of software operating systems.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	0%	**C1** (Coursework)	50%	**P1 (**Practical**)**	50%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Enable learners to understand the general purpose and operation of components in processor based systems.
- Write both high and low-level code for processor-based control systems
- Test and operate code in devices such as small robots and control systems
- Understand the software requirements of embedded system
- Demonstrate diagnostic and troubleshooting skills to solve hardware, software and networking related issues.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Explain the interactions between hardware components and the subsystems used in a computer system	8.1.1
2. Test code, operate systems and review design outcomes of a small project	8.2.1, 8.5.1
3. Evaluate user feedback and test results from multiple iterations of the prototype and end user testing.	8.2.2, 8.5.3
4. Present and demonstrate a programmed control system using language appropriate to the scenario and audience.	8.3.2, 8.3.3

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2020	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**TRIMESTER: 3**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/publications/information-andhttp://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subjecthttp://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspxbenchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)

- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/qualityhttp://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspxcode/Pages/default.aspx

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2025-26 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Simon Avery **OTHER MODULE STAFF:** None

Summary of Module Content

HW components of modern systems, linked to logic, low level programming and simple control mechanisms.
essential components of a processor-based system, applying them to controlling simple physical control systems using appropriate languages. use of robotic systems such as Arduino, PiBot etc, with languages e.g., C to produce code to be embedded in those systems.
Boolean logic applied to sensors and control systems
production of working prototypes.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	25	Delivery of module content by the lecturer in Computing lab with engagement from learners
Practical Classes and Workshops	20	Time spent in the computer labs
Guided Independent Study	155	Students expected to develop skills in coding
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Practical	In class-controlled activity – robotics coding and testing (LO2,3,4) Evaluation (LO3)	80% 20%

Coursework	Report on computer systems theory (LO1)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework (in lieu of the original assessment)	Annotated diagram and supporting notes (LO2,3,4)	100%
Coursework	Written Report (LO1)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Simon Avery Date: September 2025	**Approved by**: Chris Morris Date: September 2025

References and texts

The Vidstrom Labs Guide to Arduino Assembly Language Programming Paperback – 28 Aug 2019, Arne Vidstrom

30 Arduino Projects for the Evil Genius, Second Edition 2nd Edition, Simon Monk

The AVR Microcontroller and Embedded Systems Using Assembly and C: Using Arduino Uno and Atmel Studio Paperback – 13 Nov 2017, Naimi , Naimi and Ali Mazidi

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.*

MODULE CODE: EXCE1159 **MODULE TITLE:** Databases and Information Systems

CREDITS: 20 **FHEQ LEVEL:** 4 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module addresses the theoretical and practical design and use of information systems in a variety of contexts from small businesses to large scale operations. The use of database software will include an understanding of the structure and creation of relational database applications, as well as their applications, hosting, management and security.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	20%	**C1** (Coursework)	80%	**P1** (Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To provide an introduction to databases, their use, advantages and disadvantages.
- To examine the use of management information systems.
- To facilitate the development of practical expertise in the design, creation, maintenance and manipulation, of databases.
- To implement theoretical concepts in a practical environment.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	**Award/ Programme Learning Outcomes contributed to**
1. Apply a methodical approach to systems analysis on given information-processing system and recognise the need for the collection of information in order to develop simple information-processing systems.	8.1.2, 8.3.1
2. Develop simple models of information-processing systems and a prototype relational database to a given specification.	8.2.1
3. Recognise the need for the interactive use of databases to resolve given information-processing scenarios.	8.2.2, 8.3.1, 8.3.2
4. Apply the more advanced features to acquire information from simple relational databases.	8.5.1, 8.5.2, 8.5.3

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2020	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 2**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/publications/information-andhttp://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subjecthttp://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspxbenchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/qualityhttp://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspxcode/Pages/default.aspx

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2025-26 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Danni Potter **OTHER MODULE STAFF:** N/A

Summary of Module Content

- The steps involved with the creation of an information processing system.
- Organisational and legal considerations.
- Normalisation and Entity Relationship Diagrams.
- To introduce databases, their use, advantages and disadvantages.
- Use of a database application package to create and maintain a relational database.
- Design and application of a user interface for access to data in a database.
- Design of reports for acquiring information from a database.
- Design and use of queries for accessing data from the database

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	25	Delivery of module content by the lecturer in Computing lab with engagement from learners
Practical Classes and Workshops	20	Time spent in the computer labs
Guided Independent Study	155	Students expected to develop skills in Access/SQL
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Test	Timed in class assessment – database theory (LO1)	100%
Coursework	Database product and supporting report (LO1-4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework (in lieu of the original assessment)	Online portfolio of evidence (LO1)	100%
Coursework	Written Report (LO1-4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Danni Potter Date: September 2025	**Approved by**: Chris Morris Date: September 2025

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.*

MODULE CODE: EXCE1160 **MODULE TITLE:** Business Intelligence & Big Data

CREDITS: 20 **FHEQ LEVEL:** 4 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module provides students with the skills to contribute to the design and development of data systems. It focuses on modern engineering methods, tools and systems used for statistical computing when conducting predictive and strict analytics. Also, students will also learn how organisations use Power BI as a tool for undertaking descriptive analytics through Business Intelligence.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	0%	**C1** (Coursework)	100%	**P1 (**Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Be able to conduct an audit and analysis of the Business Intelligence requirements of an organisation and undertake the necessary planning involved.
- To gain the theoretical skills and in-depth understanding needed to pursue a future within data analytics

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Demonstrate a clear understanding of the common statistical analysis techniques used to manipulate data.	8.1.2, 8.1.3, 8.3.1
2 Demonstrate an understanding of the use of code and scripting in data analysis.	8.2.1
3 Critically evaluate technologies for the development of data applications.	8.5.2
4 Conduct an audit and analysis of the BI requirements of an organisation and undertake the necessary planning involved in a BI.	8.3.1, 8.4.2, 8.5.1

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2020	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 2**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/publications/information-andhttp://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subjecthttp://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspxbenchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)

- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/qualityhttp://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspxcode/Pages/default.aspx

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2025-26 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Chris Morris **OTHER MODULE STAFF:** None

Summary of Module Content

Introductory statistics: Linear regression, plotting functions, discrete and continuous data Degrees of confidence, correlation, standard variation, clustering, correlation,
Representing data
Optimisation
Probability theory
Business data systems
Large data bases
Statistical significance and hypothesis testing
Big data case studies
What can go wrong
Data ethics – legislation – GDPR
Using a statistical IDE
Bayesian
Tools including R, Anaconda, Python and Power BI

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	25	Delivery of module content by the lecturer in Computing lab with engagement from learners
Skills Labs	20	Using spreadsheets, packages like Power BI, Anaconda, Python
Guided Independent Study	155	Tutor support and individual study
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written report – audit of BI system (LO1-4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written Report (LO1-4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: David Stedman Date: September 2025	**Approved by**: Chris Morris Date: September 2025

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE1161 **MODULE TITLE:** Software Development

CREDITS: 20 **FHEQ LEVEL:** 4 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

In this module students develop the ability to solve problems algorithmically. Procedural, object oriented, and event-driven paradigms are studied and applied to create a program to carry out an operation. They will implement and debug applications. The process of developing an application using the software lifecycle will be explored – comparing and contrasting the various approaches.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	0%	**C1** (Coursework)	100%	**P1 (**Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To communicate sound practice in design, construction and testing of programs.
- To develop proficiency in programming structures and ability to understand and debug existing code.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Produce appropriate design documentation	8.1.2
2. Produce appropriate testing plans and records	8.4.2
3. Select and apply appropriate programming paradigms in the resolution of a given problem.	8.5.1, 8.5.2
4. Demonstrate the analysis and review of existing code then debug making use of version control.	8.2.1, 8.2.2,8.4.1

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2020	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 1**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf
- Subject benchmark statements https://www.qaa.ac.uk/quality-code/subject-benchmarkhttps://www.qaa.ac.uk/quality-code/subject-benchmark-statementsstatements
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law) • QAA Quality Code https://www.qaa.ac.uk/quality-code

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2025-26 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Bradley Chinn **OTHER MODULE STAFF:** N/A

Summary of Module Content

Programming paradigms
Coding: constants/variables, data types, methods, input/output, selection, iteration, scope, parameter passing, classes and events.
GUI programming
Debugging
IDE components
Software development lifecycle
Development methodologies e.g., Agile, DevOps etc.
Coding standards
The generation process of code; the roles of the pre-processor, compiler and linker, interpreter.
Variables, declarations and assignment
Collections e.g., Array, List, Dictionary
String and file handling

SUMMARY OF TEACHING AND LEARNING ***[Use HESA KIS definitions]***		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	25	Delivery of module content by the lecturer in Computing lab with engagement from learners
Practical Session	20	Lab sessions
Guided Independent Study	155	Personal research
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Coursework	Programming product (LO1-3) Evaluation of product and process (LO1-3) Practical in class followed by written report (LO4-5)	50% 25% 25%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Programming product and evaluation (LO1-4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Bradley Chinn Date: September 2025	**Approved by**: Chris Morris Date: September 2025

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE1162 **MODULE TITLE:** Fundamentals of Computer Networking

CREDITS: 20 **FHEQ LEVEL:** 4 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

Networking is fundamental to modern computer systems. Students will learn about standards, protocols and topologies on wired and wireless networks and the hardware and software that implement them. Students will have the opportunity to apply the skills learned to network management tasks commonly occurring in the workplace. Teaching will be a combination of classroom theory sessions together with practical activities carried out in the Faculty networking lab.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Element ; and Components of Assessment*			
T1 (Test)	40%	**P1** (Practical**)**	60%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Standards and protocols, specifically TCP/IP and related protocols
- Topologies, wired and wireless networking, cabling etc.
- Network hardware and software inc. NICs, switches, routers, firewalls
- Troubleshooting and diagnostic tools
- Network management inc. directory, DNS, DHCP, remote access

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Understand and explain networking principles and related protocols	8.1.1
2. Explain and evaluate network hardware and software	8.1.2
3. Diagnose and resolve network faults	8.2.1
4. Setup and manage network services	8.4.1, 8.5.1

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2020	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 3**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/publications/information-andhttp://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subjecthttp://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspxbenchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/qualityhttp://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspxcode/Pages/default.aspx

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2025-26 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Chris Hill **OTHER MODULE STAFF:** None

Summary of Module Content

- Features and benefits of networking
- Types of networks
- Network models, specifically TCP/IP and relation to OSI model; IPv4, IPv6
- Standards, e.g., IEEE 802.3, 802,11
- Topologies and Protocols
- Network devices and Network cabling
- Network software, e.g., client OS, server OS
- Network services, e.g., directory, DNS, DHCP, mail, web, ftp, database, terminal services • Network design
- Network tools, e.g., ping, ipconfig, tracert, route, telnet, SSH
- Cabling e.g., RJ45 straight through, crossover
- Layer 1 and layer 2 faults and diagnosis
- Packet tracers, e.g., Wireshark
- Installing network hardware and software
- Configuring hardware and software, e.g., virtual networks, IP addressing, DHCP, DNS, VPN
- Managing users inc. user profiles, groups, security policies
- Sharing resources, e.g., files and folders, devices
- Managing network applications
- Network monitoring, performance monitoring
- Firewall configuration and intrusion detection

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	40	Delivery of module content by the lecturer in Computing lab with engagement from learners
Seminars	10	Guest speakers, external events
Practical assessment	10	Completion of practical assessments in networking lab
Self-directed study	140	Students to self-study and complete ungraded activities assignments in own time
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Test	Time controlled test on networks (LO1-3)	100%
Practical	In class configuration of network systems (LO1-4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework (In lieu of original assessments)	Portfolio of practical activities to incorporate activities for T1 (LO1-3)	100%
Coursework (In lieu of original assessments)	Portfolio of practical activities to incorporate activities for P1 (LO1-4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Chris Hill Date: September 2025	**Approved by**: Chris Morris Date: September 2025

References and resources

Packet Tracer software – e.g., Wireshark

Circuit simulation e.g., CISCO Packet Tracer

Network Laboratory – Exeter College

CCNA Routing and Switching 200-125 Official Cert Guide Library

Computer Networking: A Top-Down Approach, Global Edition Paperback – 23 Aug 2016 by James Kurose (Author), Keith Ross (Author)

Cabling: The Complete Guide to Copper and Fiber-Optic Networking Paperback – 4 Apr 2014 by Bill Woodward (Author)

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.*

MODULE CODE: EXCE2027 **MODULE TITLE:** Servers and Cloud Computing

CREDITS: 20 **FHEQ LEVEL:** 5 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

Servers are at the heart of most organisations computing operation. This module explores the role of servers within organisations, their hardware and software components and the trend towards virtualisation and cloud computing. Students will have the opportunity to apply the skills learned to real and virtual servers both local and within the cloud. Teaching will be a combination of classroom theory sessions together with practical activities carried out in the Faculty networking lab.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	0%	**C1** (Coursework)	50%	**P1** (Practical**)**	50%

SUBJECT ASSESSMENT PANEL to which module should be linked: **Computing**

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Server roles: e.g., directory, file, print, web and database services
- Server hardware: component resilience and redundancy
- Server software: operating systems, middleware, applications
- Virtualisation e.g., desktop, server, bare metal, hosted, hypervisors
- Cloud computing: computing paradigms, deployment and service models, enabling technologies

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Select appropriate server hardware and software to meet specified needs.	8.1.1
2. Explain virtualisation technologies and select appropriate solutions to meet specified needs.	8.1.3
3. Demonstrate an understanding of the fundamentals of Cloud Computing, its architectures and technological drivers.	8.4.1
4. Develop cloud computing solutions using appropriate cloud platforms and tools.	8.3.2, 8.4.2, 8.4.3

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2021	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 1**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/publications/information-andhttp://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subjecthttp://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspxbenchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/qualityhttp://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspxcode/Pages/default.aspx

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:** 121
MODULE LEADER: David Stedman **OTHER MODULE STAFF:** N/A

Summary of Module Content

- Server roles
- Server hardware and software
- Designing for resilience and redundancy, scenarios
- Virtualisation models
- Virtualisation implementations
- Virtual desktop solutions
- Designing virtualisation solutions
- Computing paradigms
- Cloud deployment models
- Cloud service models
- Technology drivers
- Service providers
- Configuring VM instances, virtual networks, access rules, migration
- Implementing cloud solutions

SUMMARY OF TEACHING AND LEARNING ***[Use HESA KIS definitions]***		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	30	Delivery of module content by the lecturer in Computing lab with engagement from learners
Seminars	5	Guest speakers, external events
Practical	20	Completion of practical assessments in networking lab
Self-directed study	145	Students to self-study and complete ungraded activities assignments in own time
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on cloud technologies (LO1, LO2)	100%
Practical	Class based practical assessment – hardware and cloud problem based (LO3, LO4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework (in lieu of original assessment)	Portfolio of practical activities (LO3, LO4)	100%
Coursework	Report (LO1, LO2)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: David Stedman Date: September 2026	**Approved by**: Chris Morris Date: September 2026

Recommended Texts and Sources:

On-line services - IBM, Google, Amazon – Azure, Kubernetes, etc

Cloud Computing from Beginning to End by Ray J Rafaels

Cloud Computing for Dummies by Judith S. Hurwitz, Robin Bloor, Marcia Kaufman, Fern Halper

Cloud Computing: Concepts, Technology & Architecture by Zaigham Mahmood, Ricardo Puttini, Thomas
Erl

Cloudonomics: The Business Value of Cloud Computing by Joe Weinman

Google Cloud Platform – free, needs Google Account

Azure - etc

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE2028 **MODULE TITLE:** Artificial Intelligence

CREDITS: 20 **FHEQ LEVEL:** 5 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

In this module the theoretical foundation of artificial intelligence, current trends and ethical issues are used as a basis to critically appraise AI technology. Students implement and test two intelligent systems using one top-down and one bottom-up approach. A range of emerging AI technologies are investigated to determine future changes in industry.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
E1 (Examination)	0%	**C1** (Coursework)	50%	**P1** (Practical**)**	50%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Develop a theoretical understanding of the components required for an AI system
- Develop a top-down AI such as a chat bot
- Develop a bottom-up AI such as a Genetic Algorithm
- Develop learners' skills on modern AI technologies and frameworks
- Stimulate learners' creativity and encourage a focus on enterprising and challenging tasks and activity.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Evaluate different AI systems from a social, ethical and philosophical perspective	8.2.2
2. Demonstrate an understanding of top-down AI concepts	8.3.2
3. Demonstrate an understanding of bottom-up AI concepts	8.3.1
4. Review and comment on future trends in AI and the industrial impacts	8.2.1, 8.4.1

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2021	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 1**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf
- Subject benchmark statements https://www.qaa.ac.uk/quality-code/subject-benchmarkhttps://www.qaa.ac.uk/quality-code/subject-benchmark-statementsstatements
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law) • QAA Quality Code https://www.qaa.ac.uk/quality-code

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Adam Clement **OTHER MODULE STAFF:** N/A

Summary of Module Content

Introduction to AI, history of AI, course logistics.
Search techniques e.g., brute force, hill climbing algorithm, simulated annealing, adversarial search. Constraint Satisfaction Problems.
Machine Learning.
Top-Down AI:

- Natural language processing
- Fuzzy logic
- Knowledge based systems Bottom-Up AI:
- Neural networks
- Genetic algorithms
- Swarm intelligence Philosophical background of AI.

Social and ethical Issues of AI.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	20	Delivery of module content by the lecturer in Computing lab with engagement from learners
Seminar	10	Smaller workshop sessions where students explore practical environment, including e.g., Python and Cloud AI
Project	10	Students develop model on Cloud or other system
Guided Independent Study	160	Personal research
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written Essay on AI systems and trends (LO1,4)	100%
Practical	AI project (LO2, LO3) Viva (LO2, LO3)	50% 50%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written Essay (LO1, LO4)	100%
Coursework (in lieu of original assessment)	Project Report (LO2, LO3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Adam Clement Date: September 2026	**Approved by**: Chris Morris Date: September 2026

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE2029 **MODULE TITLE:** Cyber Security
CREDITS: 20 **FHEQ LEVEL:** 5 **HECOS CODE:** 100367 Computer and Information Technology
PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This unit provides an overview of the challenge that organisations face in securing their systems. It examines practical policies and strategies that are deployed to secure modern distributed systems. There is a strong focus on practical activities in the networking lab to ensure students have a practical knowledge of the security landscape. Students will learn how to secure systems, forensically analyse systems to find evidence of attacks or infrastructure vulnerabilities that could be exploited by a cybercriminal. Cryptographic protocols cover confidentiality and integrity of data as well as authentication and authorisation.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	40%	**C1** (Coursework)	60%	**P1** (Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To gain an understanding of the threats and vulnerabilities associated with IT systems and architectures.
- To familiarise students with the principles and fundamentals of system- level security technologies.
- To develop an understanding of the core security mechanisms pertaining to individual host systems as well architectures. This also includes basic knowledge of cryptographic mechanisms.
- To gain experience in the application of these mechanisms in typical IT-systems and architectures.
- To provide a contextual overview of the law and regulations related to these mechanisms.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Demonstrate an understanding of risk factors and vulnerabilities at IT system and architectural level as well as the need for system-level security mechanisms within IT systems and architectures	8.1.1, 8.1.3
2. Identify and apply security technologies, and implement security mechanisms, justifying their role as part of countermeasures.	8.1.2, 8.3.3
3. Implement and test security solutions.	8.3.1, 8.3.2, 8.5.1
4. Analyse the need for protection mechanisms within different scenarios and explain the associated security issues and solutions.	8.5.1, 8.3.3

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2021	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 2**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf
- Subject benchmark statements https://www.qaa.ac.uk/quality-code/subject-benchmarkhttps://www.qaa.ac.uk/quality-code/subject-benchmark-statementsstatements
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code https://www.qaa.ac.uk/quality-code

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:** 121

MODULE LEADER: Kristina Bayntun-Norman **OTHER MODULE STAFF:** N/A

Summary of Module Content

Threats and Vulnerabilities
Malware and protection mechanisms, Vulnerability exploitation and management.
Security principles and perspectives
Authentication mechanisms
Penetration testing
Cryptographic methods for data confidentiality, integrity and non-repudiation
Applying security mechanisms including Cloud architectures and security
Evaluating security of systems and architectures
Designing usable security

SUMMARY OF TEACHING AND LEARNING ***[Use HESA KIS definitions]***		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	20	Delivery of module content by the lecturer in Computing lab with engagement from learners
Practical Classes and Workshops	20	Practical activities in the Computer Lab
Guided Independent Study	160	Students are expected to focus additional time outside of timetabled lessons towards developing their practical and theoretical knowledge
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Coursework	Report on cyber security practices with recommendations (LO2-4)	100%
Test	In class-controlled assessment on cyber security risks (LO1,2)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report (LO2-4)	100%
Coursework (in lieu of original assessment)	Portfolio of practical activities (LO1, LO2)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Kristina Bayntun-Norman Date: September 2026	**Approved by**: Chris Morris Date: September 2026

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE2030 **MODULE TITLE:** Object Oriented Programming

CREDITS: 20 **FHEQ LEVEL:** 5 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

In this module students learn the underpinning concepts of object orientation. Industry standard approaches to the design and documentation of object-oriented systems are covered. Students will learn how to create large-scale projects by using creational, structural and behavioural design patterns to manage complexity and by building on top of an established object-oriented API.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	0%	**C1** (Coursework)	100%	**P1** (Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To develop knowledge of the object-oriented programming paradigm.
- To develop an appropriate understanding of object-oriented modelling techniques.
- To implement re-usable, object-oriented systems components.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Implement a solution to practical or theoretical problems within an object oriented environment.	8.1.1, 8.2.1
2. Analyse given problems and identify solutions e.g., with design patterns	8.2.2, 8.2.3
3. Understand the complexities of working in and managing a group in application development	8.3.1, 8.3.2, 8.5.1
4. Produce appropriate documentation to support the resolution of a problem.	8.5.2, 8.5.3

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2021	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 3**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf
- Subject benchmark statements https://www.qaa.ac.uk/quality-code/subject-benchmarkhttps://www.qaa.ac.uk/quality-code/subject-benchmark-statementsstatements
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law) • QAA Quality Code https://www.qaa.ac.uk/quality-code

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Adam Clement **OTHER MODULE STAFF:** N/A

Summary of Module Content

- Object modelling techniques.
- The implementation of abstract data types as classes.
- Attributes and methods, objects and message passing.
- Classification and composition hierarchies, inheritance and aggregation.
- Polymorphism
- Encapsulation
- Single responsibility
- Public, private, static, dynamic
- Overloading
- Constructors and Destructors
- Reference types and value types
- Dynamic bindings and virtual functions
- Creational, structural and behavioural design patterns

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	25	Delivery of module content by the lecturer in Computing lab with engagement from learners
Demonstration	15	In class instruction and practical application of core delivery
Practical Classes and Workshops	20	Time in the Computer Lab
Guided Independent Study	140	Students are expected to focus additional time outside of timetabled lessons towards developing their practical and theoretical knowledge
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Programming product and supporting report (LO1-4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report (LO1-4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Adam Clement Date: September 2026	**Approved by**: Chris Morris Date: September 2026

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE2031 **MODULE TITLE:** Workplace Learning

CREDITS: 20 **FHEQ LEVEL:** 5 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module is designed to equip students with the necessary knowledge and skills to develop themselves in terms of their personal and employability skills.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
E1 (Examination)	0%	**C1** (Coursework)	100%	**P1** (Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Develop conceptual and practical skills in personal development planning for study at degree level and readiness for employability, wherever possible this will be done with local employers.
- Equip learners with baseline personal resources for study and employment such as integrity, personal responsibility, reliability and self-motivation.
- Develop learners' skills in team working, decision-making, problem solving and communication, e.g., by utilising methodologies such as Agile
- Stimulate learners' creativity and encourage a focus on enterprising and challenging tasks and activity.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Evaluate and benchmark own study and analysis skills, capabilities and developmental needs.	8.2.2
2. Demonstrate understanding of concepts relating to personal, employability skills and work-related skills.	8.2.3, 8.3.1
3. Reflect on personal and professional practice and manage and self-direct personal and professional learning and development.	8.4.1, 8.3.1, 8.3.3
4. Complete a work-based project, demonstrating the application of professional practice in the workplace.	8.4.2, 8.4.3, 8.3.3, 8.5.2

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2021	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 3**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf
- Subject benchmark statements https://www.qaa.ac.uk/quality-code/subject-benchmarkhttps://www.qaa.ac.uk/quality-code/subject-benchmark-statementsstatements
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law) • QAA Quality Code https://www.qaa.ac.uk/quality-code

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Danni Potter **OTHER MODULE STAFF:** N/A

Summary of Module Content

- Personal Development Planning - Personal audit, professional development, career management skills.
- Intra and Interpersonal Skills - Influencing, negotiating, conflict resolution, risk taking, problem solving, time management, decision making, teamwork, initiative, self-esteem, self - awareness, leadership, innovation, creativity and enterprise.
- Understanding the Business Context - Organizational culture, business strategy, sustainability, cultural diversity, corporate social responsibility, financial literacy.
- Project engagement – using relevant techniques, planning, monitoring, evaluation, reporting. Project based with employer – aim to be done as part of work experience.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	20	Delivery of module content by the lecturer in Computing lab with engagement from learners
Seminar	12	Smaller workshop sessions where students are supported to apply learning to themselves and their specific industry
Project Supervision	8	As part of assignment 1 students have to take part in a group project, which seminar tutors set and supervise
Guided Independent Study	160	Students are expected to focus additional time outside of timetabled lessons towards the group project and their own personal development and career planning
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Work based project with presentation (LO1-4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on work-based project (LO1-4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: David Stedman Date: September 2026	**Approved by**: Chris Morris Date: September 2026

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE2032 **MODULE TITLE:** Website Development

CREDITS: 20 **FHEQ LEVEL:** 5 **HECOS CODE:** 100367 Computer and Information Technology

PRE-REQUISITES: None **CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module teaches the fundamentals of web-design and the concepts fundamental to web technologies. Students will code a website using industry standard languages and tools. Students will use popular code libraries, as well as integrating data from a range of APIs to add extra functionality. A strong emphasis is placed on accessibility and usability, as well as SEO techniques and compliance to current web standards.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
E1 (Examination)	0%	**C1** (Coursework)	50%	**P1 (**Practical**)**	50%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Understand the key elements in web design for usability and accessibility.
- Evaluate current website production technologies and justify their use.
- Create interactive websites using relevant code libraries and APIs.
- Explain the importance of SEO and standards compliance and how to achieve these.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Categorise website technologies, tools and techniques used to develop websites.	8.1.2
2. Demonstrate an understanding of usability and accessibility in relation to web design.	8.3.2, 8.3.3
3. Utilise website technologies, tools and techniques with good design principles to create a multipage website, justifying your method.	8.4.3, 8.5.1, 8.5.2
4. Demonstrate an understanding of SEO techniques and current standards that apply to website creation.	8.5.3

DATE OF APPROVAL: 03/09/2020	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2021	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 2**

Notes:

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf
- Subject benchmark statements https://www.qaa.ac.uk/quality-code/subject-benchmarkhttps://www.qaa.ac.uk/quality-code/subject-benchmark-statementsstatements
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law) • QAA Quality Code https://www.qaa.ac.uk/quality-code

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:** 121
MODULE LEADER: Bradley Chinn **OTHER MODULE STAFF:** N/A

Summary of Module Content

Creative and technical decision making through purposeful investigation and considered analysis of diverse web technologies and associated usability and accessibility issues.
e.g., W3C Compliance, UX Metrics, Benchmarking Tools, Google Page Insights, , rules and heuristics for good website design.

The impact of common web development technologies and frameworks with regards to website design, functionality and management.
e.g., HTML5, CSS3, JavaScript, ReactJS, Vue.js, jQuery, Materialize CSS, Bootstrap 5.

Production of coherent interactive web pages using specialist technologies and design content in an individual manner.
e.g., HTML5, CSS3, JavaScript, Flexbox, CSS Grid, RESTful APIs, AJAX, internal; external; in-line styles, ID; Class; Tag selectors, SCSS, @media rules.

The influence of search engines and compliance to web standards on website performance and provide evidence-based support for improving a site's index value, rank and performance through search engine optimisation and compliance to web standards.
e.g. W3C Compliance, meta-tagging, simple URLs, anchor text, links to and from other websites, paid promotion, the effect of social media platforms, browser compatibility testing, platform testing.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	35	Delivery of module content by the lecturer in Computing lab with engagement from learners
Seminar	10	Group discussion and activities
Guided Independent Study	155	Students' self-study
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on web technologies (LO1,4) Evaluation of website (LO3)	80% 20%
Practical	Multipage Website product (LO2,3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Project Report (LO1, LO4)	100%
Coursework (in lieu of original assessment)	Presentation slides and speaker notes (LO2, LO3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Bradley Chinn Date: September 2026	**Approved by**: Chris Morris Date: September 2026

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE2033	**MODULE TITLE:** Penetration Testing	
CREDITS: 20	**FHEQ LEVEL:** 5	**HECOS CODE:** 100367 Computer and Information Technology
PRE-REQUISITES: None	**CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

Introducing information security management and organisational security risk audits and frameworks, with ethical hacking and management of security improvement plans. Using Contemporary tools, develop personal, technical and theoretical knowledge and skills required to plan, test, analyse and secure systems. Students will gain the technical, auditing and analysis skills to progress to employment or further studies.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
T1 (Test)	0%	**C1** (Coursework)	100%	**P1** **(**Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To gain an understanding of the threats and vulnerabilities associated with IT systems and architectures, including social aspects.
- To develop skills, knowledge and behaviours necessary for entry level employment in the security industry
- To identify the level of technical risk emanating from software and hardware vulnerabilities
- To understand the implication of cloud integrated networks and applications
- To plan a test then, implement the test, analyse the results and make recommendations for improved security.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Developing a theoretical understanding of Security Management in order to plan a penetration test	8.1.1, 8.1.2, 8.3.3, 8.5.1
2. Implementing a penetration test	8.1.1, 8.2.1
3. Interpreting the results of a penetration test	8.2.2, 8.2.3
4. Recommending further security measures for the test network	8.5.2, 8.5.3,

DATE OF APPROVAL: 28/04/2022	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: 01/09/2022	**SCHOOL/PARTNER: Exeter College**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Trimester 3**
Notes:	

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-frameworks.pdf
- Subject benchmark statements https://www.qaa.ac.uk/quality-code/subject-benchmarkhttps://www.qaa.ac.uk/quality-code/subject-benchmark-statementsstatements
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law) • QAA Quality Code https://www.qaa.ac.uk/quality-code

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:** 121

MODULE LEADER: Kristina Bayntun-Norman **OTHER MODULE STAFF:** N/A

Summary of Module Content

Testing methods: Different testing methods, e.g., network scanning, penetration testing, vulnerability scanning, ethical hacking. Testing in terms of checks on network connection speed, testing for network vulnerabilities, network connection types, e.g., cabled and wireless. Collection and interpretation of relevant data to identify potential issues, e.g., latency, traffic, packet data, system logs. Testing tools, Kali, Wireshark, etc.

Whitebox testing, Blackbox testing, Vulnerability identification, Scenario driven testing, detection and response capabilities. Scenarios include Lost laptop, unauthorised device connected to internal network, and compromised DMZ host etc

Comprehensively test all devices and the whole environment: Tests should be carried out on all devices including firewall, servers, domain controllers, email servers, routers, switches, gateways and passwords. Make recommendations: Recommendations for improving the network security.

Create a Test Plan: Development of a test plan to include testing data, expected results, actual results. Application of key behaviours to develop an effective test plan and correct defects, including consideration of cause and effect to design appropriate tests and test data.

Critical thinking and application root cause analysis to interpret results and identify and correct defects, e.g., critical thinking, effective questioning and deconstruction.

Strategic/technical risk and issues: Quantum, Metaverse, SCADA, IoT, Critical National Infrastructure (CNI), Deception psychology, management, security frameworks such as NIST & CREST.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	20	Delivery of module content by the lecturer in Computing lab with engagement from learners
Practical Classes and Workshops	20	Practical activities in the Computer Lab
Guided Independent Study	155	Students are expected to focus additional time outside of timetabled lessons towards developing their practical and theoretical knowledge
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on cyber security practices with recommendations (LO3,4,) Portfolio of Practical activities (LO1, LO2)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on cyber security practices with recommendations (LO3,4,) Portfolio of Practical activities (LO1, LO2)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: David Stedman Date: September 2026	**Approved by**: Chris Morris Date: September 2026

Recommended reading

Engebretson, P. (2013). *The basics of hacking and penetration testing: ethical hacking and penetration testing made easy*. Amsterdam; Boston: Syngress, An Imprint Of Elsevier.

Teixeira, D., Abhinav Singh and Agarwal, M. (2018). *Metasploit penetration testing cookbook: evade antiviruses, bypass firewalls, and exploit complex environments with the most widely used penetration testing framework*. Birmingham: Packt Publishing. Copyright.

Martorella, C. (2018). *LEARNING PYTHON WEB PENETRATION TESTING: automate web penetration testing activities using python.*

Himanshu Sharma (2019). *KALI LINUX - AN ETHICAL HACKER'S COOKBOOK -: over 120 recipes to perform advanced penetration... testing.* S.L.: Packt Publishing Limited.

Kali.org. (2018). *Our Most Advanced Penetration Testing Distribution, Ever.* [online] Available at: https://www.kali.org/.

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD. ***Proposed changes must be submitted via Faculty/AP Quality Procedures for approval and issue of new module code.***

MODULE CODE: EXCE2034	**MODULE TITLE:** Software Development and IT Operations (SWDevOps)	
CREDITS: 20	**FHEQ LEVEL:** 5	**HECOS CODE:** 100367 Computer and Information Technology
PRE-REQUISITES: None	**CO-REQUISITES:** N/A	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

Designed to equip students with the skills/knowledge of the principles, practice and behaviours expected by organisations in roles such as a SW Dev Ops associate/engineer or further studies. It will extend the technical expertise of an OOP skill set into the contemporary work environment and provide an overview of the introduction and maintenance of digital transformation initiatives and projects.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
E1 (Examination)	0%	**C1** (Coursework)	100%	**P1** (Practical**)**	0%

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To gain an understanding of, and the ability to evaluate business processes
- To gain the knowledge and skills to develop and refine business processes
- The ability to implement business processes
- To gain experience of using Agile methodologies

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.

At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
1. Evaluate business processes	8.5.1, 8.3.3
2. Develop a business process	8.1.2, 8.3.3
3. Implement a business process	8.3.1, 8.3.2, 8.5.1
4. Use Agile methodologies to work with others	8.1.1, 8.1.3

DATE OF APPROVAL: 28/04/2022	**FACULTY/OFFICE:** Academic partnerships
DATE OF IMPLEMENTATION: 01/09/2022	**SCHOOL/PARTNER:** Exeter College
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Semester 2**

Notes:
This module has been designed with reference to BCS, Institute of Apprenticeships, HTQ frameworks and the needs of industry.
HTQ Occupational standards – *Instituteforapprenticeships.org*
Pearson – BTEC Computing HN RQF 2021- *qualifications.pearson.com*
BCS British Computer Society - *bcs.org*
Various commercial organisations, such as AWS, Azure, etc.
Job market research
Dev Ops Institute – USA

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/publications/information-andhttp://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subjecthttp://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspxbenchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g., health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/qualityhttp://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspxcode/Pages/default.aspx

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2026-2027 **NATIONAL COST CENTRE:**121
MODULE LEADER: Adam Clement **OTHER MODULE STAFF:** N/A

Summary of Module Content

- Continuous Integration - including common tooling, distributed source control, branching time, cost, quality, modern security tools and techniques.
- Learning problem solving techniques, data ethics and law with automation and artificial intelligence general purpose programming and infrastructure as code.
- Immutable infrastructure Software-as-a-Service (SaaS) v bespoke v enterprise tooling stateful distributed systems.
- Agile manifesto, professional development and behaviour, organisational cultures and development frameworks, user experience accessibility and adoption.
- Behaviours, build, run own collaborative project management including branching Incremental refactoring professional development, cloud infrastructure, certification Monitoring and alerting technologies.
- The persistence/data layers
- Automation techniques, scripting and APIs.
- Test Driven Development, Test Pyramid and automation
- Continuous Integration, Delivery and Deployment Data security cloud security tools and techniques security threats logs and metrics data within the appropriate context to identify issues and make informed decisions.
- Roles and interfaces in teams, collaboration and monitoring tools,
- Communicating effectively in organisations,
- Pair/mob programming organisational culture Architecture principles,
- User case specifications, common patterns and strategies for cloud infrastructure and application code.
- Modelling techniques Coding in OOP (separate module)

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lecture	25	Delivery of module content by the lecturer in Computing lab with engagement from learners
Practical Classes and Workshops	25	Practical activities in the Computer Lab
Guided Independent Study	150	Students are expected to focus additional time outside of timetabled lessons towards developing their practical and theoretical knowledge
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	1. Report 1 - Evaluate a business model and design improvements. LO1,2 2. Report 2 Implement a new solution, whilst using appropriate technical and team methodologies LO3, 4	50% 50% TOTAL 100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework RESUBMIT	1. Report 1 - Evaluate a business model and design improvements. LO1,2 2. Report 2 Implement a new solution, whilst using appropriate technical and team methodologies LO3, 4	50% 50% 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Adam Clement Date: September 2026	**Approved by**: Chris Morris Date: September 2026

Recommended reading

Kim, G., Debois, P., Willis, J., Humble, J. and Allspaw, J. (2017). The DevOps handbook : how to create world-class agility, reliability, and security in technology organizations. Portland, Or: It Revolution Press, Llc.

Kim, G., Behr, K. and Spafford, G. (2018). The Phoenix Project: a novel about IT, DevOps, and helping your business win. Portland, Oregon: It Revolution Press.

Kim, G. (2019). The unicorn project: a novel about developers, digital disruption, and thriving in the age of data. Portland, Or: It Revolution.

Morris, K. (2016). Infrastructure as code: managing servers in the cloud. Beijing; Boston; Farnham; Sebastopol; Tokyo O'Reilly June.