



**UNIVERSITY OF  
PLYMOUTH**

# **ACADEMIC PARTNERSHIPS PROGRAMME QUALITY HANDBOOK 2021-22**

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## **HND Computing**

**Including HNC pathway to HND**

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# Welcome and Introduction

Welcome to the: HND 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 dependant 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

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. HND

**Final award title** HND 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 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
- Specialist curriculum focus on Cyber Security and Cloud Technologies
- Staff actively engaged in industry supported by wider ongoing CPD
- Progression agreement to BSc (Hons) Computing with the University of Plymouth

## 5. Relevant QAA Subject Benchmark Group(s)

- Computing QAA Subject Benchmark Statement February 2016

## 6. Programme Structure

### Full Time Option:

	Module Code <sup>1</sup>	Module Title	Credits	Trimester	Compensatable
Year 1	EXCE1157	Computational Thinking	20	1	Y
	EXCE1158	Computer Systems & Control	20	1	Y
	EXCE1159	Databases & Information Systems	20	2	Y
	EXCE1160	Business Intelligence & Big Data	20	2	Y
	EXCE1161	Software Development	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
	EXCE2030	Object Oriented Programming	20	2	Y
	EXCE2031	Workplace Learning	20	3	Y
	EXCE2032	Website Development	20	3	Y

### Part Time Option:

	Module Code <sup>2</sup>	Module Title	Credits	Trimester	Compensatable
Year 1	EXCE1157	Computational Thinking	20	1	Y
	EXCE1159	Databases & Information Systems	20	2	Y
	EXCE1161	Software Development	20	3	Y
Year 2	EXCE1158	Computer Systems & Control	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
	EXCE2030	Object Oriented Programming	20	2	Y
	EXCE2032	Website Development	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 and 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 opportunities for students to achieve vendor accredited certifications.
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. The ability to form a professional connection with technical and non-technical audiences
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 Computing	
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
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 the BSc (Hons) Computing at level 6. Students can apply to other institutions for a preferred top-up option.

## **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	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%
Level 5 LOs																		
Confirmed Award LOs																		

# Module Records

**NOTE:** Module Records for Year One can be found in the HNC Computing Quality Handbook

## 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  
**PRE-REQUISITES:** None    **CO-REQUISITES:** None    **COMPENSATABLE:** Y

**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](#)*

<b>T1</b> (Test)	0%	<b>C1</b> (Coursework)	50%	<b>P1</b> (Practical)	50%
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**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

<b>DATE OF APPROVAL:</b> 03/09/2020	<b>FACULTY/OFFICE:</b> Academic Partnerships
<b>DATE OF IMPLEMENTATION:</b> 01/09/2021	<b>SCHOOL/PARTNER:</b> Exeter College
<b>DATE(S) OF APPROVED CHANGE:</b> XX/XX/XXXX	<b>SEMESTER:</b> 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-and-guidance/publication/?PubID=2718#.VW2INtJVikp>
- Subject benchmark statements  
<http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-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/quality-code/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: 2021/22**  
**MODULE LEADER: Ian Wallace**

**NATIONAL COST CENTRE: 121**  
**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

<b>SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]</b>		
<b>Scheduled Activities</b>	<b>Hours</b>	<b>Comments/Additional Information (briefly explain activities, including formative assessment opportunities)</b>
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	140	Students to self-study and complete ungraded activities assignments in own time
<b>Total</b>	<b>200</b>	<b>(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)</b>

## 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: August 2021

**Approved by:** Ian Wallace

Date: August 2021

### 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**

**CREDITS:** 20

**PRE-REQUISITES:** None

**MODULE TITLE:** Artificial Intelligence

**FHEQ LEVEL:** 5

**CO-REQUISITES:** None

**HECOS CODE:** 100367

**COMPENSATABLE:** Y

**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](#)*

<b>E1</b> (Examination)	0%	<b>C1</b> (Coursework)	50%	<b>P1</b> (Practical)	50%
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**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:

<b>Assessed Module Learning Outcomes</b>	<b>Award/ Programme Learning Outcomes contributed to</b>
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
<b>DATE OF APPROVAL:</b> 03/09/2020	<b>FACULTY/OFFICE:</b> Academic Partnerships
<b>DATE OF IMPLEMENTATION:</b> 01/09/2021	<b>SCHOOL/PARTNER:</b> Exeter College
<b>DATE(S) OF APPROVED CHANGE:</b> XX/XX/XXXX	<b>SEMESTER:</b> 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-benchmark-statements>
- 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: 2021/2022**  
**MODULE LEADER: Oscar O'Brien**

**NATIONAL COST CENTRE: 121**  
**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.

<b>SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]</b>		
<b>Scheduled Activities</b>	<b>Hours</b>	<b>Comments/Additional Information (briefly explain activities, including formative assessment opportunities)</b>
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
<b>Total</b>	<b>200</b>	<b>(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)</b>

## 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:** David Stedman  
Date: August 2021

**Approved by:** Ian Wallace  
Date: August 2021

## 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**

**CREDITS:** 20

**PRE-REQUISITES:** None

**MODULE TITLE:** Cyber Security

**FHEQ LEVEL:** 5

**CO-REQUISITES:** None

**HECOS CODE:** 100367

**COMPENSATABLE:** Y

**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](#)*

<b>T1</b> (Test)	40%	<b>C1</b> (Coursework)	60%	<b>P1</b> (Practical)	0%
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**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

<b>DATE OF APPROVAL:</b> 03/09/2020	<b>FACULTY/OFFICE:</b> Academic Partnerships
<b>DATE OF IMPLEMENTATION:</b> 01/09/2021	<b>SCHOOL/PARTNER:</b> Exeter College
<b>DATE(S) OF APPROVED CHANGE:</b> XX/XX/XXXX	<b>SEMESTER:</b> Trimester 2 & 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-benchmark-statements>
- 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: 2021/2022**  
**MODULE LEADER: Ian Wallace**

**NATIONAL COST CENTRE: 121**  
**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

<b>SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]</b>		
<b>Scheduled Activities</b>	<b>Hours</b>	<b>Comments/Additional Information (briefly explain activities, including formative assessment opportunities)</b>
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
<b>Total</b>	<b>200</b>	<b>(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)</b>

## 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:** David Stedman

Date: August 2021

**Approved by:** Ian Wallace

Date: August 2021



## 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

**CREDITS:** 20

**PRE-REQUISITES:** None

**MODULE TITLE:** Object Oriented Programming

**FHEQ LEVEL:** 5

**CO-REQUISITES:** None

**HECOS CODE:** 100367

**COMPENSATABLE:** Y

**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](#)

<b>T1</b> (Test)	0%	<b>C1</b> (Coursework)	100%	<b>P1</b> (Practical)	0%
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**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. Apply learned concepts and theories to the resolution of given practical problems.	8.1.2, 8.3.3
4. Produce appropriate documentation to support the resolution of a problem.	8.5.2, 8.5.3

<b>DATE OF APPROVAL:</b> 03/09/2020	<b>FACULTY/OFFICE:</b> Academic Partnerships
<b>DATE OF IMPLEMENTATION:</b> 01/09/2021	<b>SCHOOL/PARTNER:</b> Exeter College
<b>DATE(S) OF APPROVED CHANGE:</b> XX/XX/XXXX	<b>SEMESTER:</b> 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-benchmark-statements>
- 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: 2021/2022**  
**MODULE LEADER: Oscar O'Brien**

**NATIONAL COST CENTRE: 121**  
**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

<b>SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]</b>		
<b>Scheduled Activities</b>	<b>Hours</b>	<b>Comments/Additional Information (briefly explain activities, including formative assessment opportunities)</b>
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
<b>Total</b>	<b>200</b>	<b>(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)</b>

## SUMMATIVE ASSESSMENT

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

## REFERRAL ASSESSMENT

<b>Element Category</b>	<b>Component Name</b>	<b>Component Weighting</b>
Coursework	Report (LO1-4)	100%

**To be completed when presented for Minor Change approval and/or annually updated**

**Updated by:** David Stedman  
Date: August 2021

**Approved by:** Ian Wallace  
Date: August 2021

## 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  
**PRE-REQUISITES:** None      **CO-REQUISITES:** None      **COMPENSATABLE:** Y

**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.

<b>ELEMENTS OF ASSESSMENT</b> <i>[Use HESA KIS definitions]</i> – see <a href="#">Definitions of Elements and Components of Assessment</a>					
<b>E1</b> (Examination)	0%	<b>C1</b> (Coursework)	100%	<b>P1</b> (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:

<b>Assessed Module Learning Outcomes</b>	<b>Award/ Programme Learning Outcomes contributed to</b>
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

<b>DATE OF APPROVAL:</b> 03/09/2020	<b>FACULTY/OFFICE:</b> Academic Partnerships
<b>DATE OF IMPLEMENTATION:</b> 01/09/2021	<b>SCHOOL/PARTNER:</b> Exeter College
<b>DATE(S) OF APPROVED CHANGE:</b> XX/XX/XXXX	<b>SEMESTER:</b> 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-benchmark-statements>
- 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: 2021/2022**  
**MODULE LEADER: Danni Potter**

**NATIONAL COST CENTRE: 121**  
**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.

<b>SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]</b>		
<b>Scheduled Activities</b>	<b>Hours</b>	<b>Comments/Additional Information (briefly explain activities, including formative assessment opportunities)</b>
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
<b>Total</b>	<b>200</b>	<b>(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)</b>

## SUMMATIVE ASSESSMENT

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

## REFERRAL ASSESSMENT

<b>Element Category</b>	<b>Component Name</b>	<b>Component Weighting</b>
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: August 2021

**Approved by:** Ian Wallace  
Date: August 2021



## 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

**PRE-REQUISITES:** None

**CO-REQUISITES:**  
None

**COMPENSATABLE:** Y

**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 client-side languages. 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](#)

<b>E1</b> (Examination)	0%	<b>C1</b> (Coursework)	50%	<b>P1</b> (Practical)	50%
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**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.  2. Demonstrate an understanding of usability and accessibility in relation to web design.  3. Utilise website technologies, tools and techniques with good design principles to create a multipage website, justifying your method.  4. Demonstrate an understanding of SEO techniques and current standards that apply to website creation.	8.1.2  8.3.2, 8.3.3  8.4.3, 8.5.1, 8.5.2  8.5.3
<b>DATE OF APPROVAL:</b> 03/09/2020	<b>FACULTY/OFFICE:</b> Academic Partnerships
<b>DATE OF IMPLEMENTATION:</b> 01/09/2021	<b>SCHOOL/PARTNER:</b> Exeter College
<b>DATE(S) OF APPROVED CHANGE:</b> XX/XX/XXXX	<b>SEMESTER:</b> 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-benchmark-statements>
- 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: 2021/2022**  
**MODULE LEADER: Adam Clement**

**NATIONAL COST CENTRE: 121**  
**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, GMetrix Site Testing, 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 4.*

Production of coherent interactive web pages using specialist technologies and design content in an individual manner.  
*e.g. HTML5, CSS3, JavaScript, Flexbox, CSS Grid, MapBox API, 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.*

<b>SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]</b>		
<b>Scheduled Activities</b>	<b>Hours</b>	<b>Comments/Additional Information (briefly explain activities, including formative assessment opportunities)</b>
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
<b>Total</b>	<b>200</b>	<b>(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)</b>

## 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:** David Stedman  
Date: August 2021

**Approved by:** Ian Wallace  
Date: August 2021