UNIVERSITY CENTRE TRURO & PENWITH

**University of Plymouth
Academic Partnerships**

Truro & Penwith College

Programme Quality Handbook

FdEng Software Engineering

2023 – 2024

Contents

Welcome and Introduction to FdEng Software Engineering

The FdEng Software Engineering programme at Truro and Penwith College has been designed to equip you with the skills and knowledge base required to work in your chosen specialism or to take advantage of other graduate opportunities. It is also a platform from which you can undertake additional academic, and in some instances professional, qualifications. The programme is validated by the University of Plymouth and underpinned by the QAA Quality Code.

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 the Truro and Penwith Student Handbook available on Digital Campus which contains student support based information on issues such as finance and studying at HE along with the University's Student Handbook https://www.plymouth.ac.uk/your-university/governance/student-handbook and your Learning, Teaching and Assessment Handbook available on your programme virtual learning environment (Moodle/SharePoint).

Programme Specification

1. Award

Final Award Title: FdEng Software Engineering

UCAS Code: **I300**

HECoS Code: 100374 software engineering

2. Awarding Institution: University of Plymouth

- **Teaching Institution: Truro and Penwith College**

3. Accrediting Body(ies)

n/a

4. Distinctive Features of the Programme and the Student Experience

- Expert staff including experienced industry professionals and qualifications to MSc Level.
- Valuable networking opportunities within Cornwall and the UK, including through organisations such as Software Cornwall
- Opportunities to undertake placements with a range of businesses within the digital sector.
- Curriculum designed in collaboration with industry aligning to industry skills gaps and employable skills.
- Module alignment to industry/vendor qualifications
- Access to specialist resources in Valency SWIOT building at Truro Campus and Ottery STEM centre at Bodmin (currently under construction).

5. Relevant QAA Subject Benchmark Group(s)

[The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies (qaa.ac.uk)](qaa.ac.uk)

[Characteristics Statement: Foundation Degree (qaa.ac.uk)](qaa.ac.uk)

[Subject Benchmark Statement: Computing (qaa.ac.uk)](qaa.ac.uk)

6. Programme Structure

o **Full-time Route**

YEAR 1 (LEVEL 4)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR1280	Website Development	20	Core	1
TRUR1278	Introductory Programming	20	Core	1/2
TRUR1282 (Option A)	Maths for Computing	10	Optional	1
TRUR1283 (Option B)	User Centred Design	10	Optional	1
TRUR1284 (Option C)	Boolean logic and Assembly	10	Optional	1
TRUR1279	Data Management	20	Core	1
TRUR1281	Systems Analysis and Design	20	Core	2
TRUR1300	Software Development Practices	20	Core	2
TRUR1285 (Option D)	Security and Cryptography	10	Optional	2
TRUR1286 (Option E)	System Architecture	10	Optional	2
TRUR1287 (Option F)	The Digital Society	10	Optional	2

YEAR 2 (LEVEL 5)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR2281	Agile Project Management	20	Core	1/2
TRUR2282	Data Structures and Algorithms	20	Core	1/2
TRUR2283	Object Oriented Programming	20	Core	1/2
TRUR2284	Software Testing	10	Core	1
TRUR2285	Independent Project	20	Core	2
TRUR2286 (Option G)	Industrial Placement	10	Optional	1/2
TRUR2287 (Option H)	Server-Side Programming	10	Optional	1/2

Module Code	Module Title	Credits	Core / Optional	Term / Semester
TRUR2288 (Option I)	Data Analytics and Big Data	10	Optional	1
TRUR2289 (Option J)	Developing Applications	10	Optional	1
TRUR2290 (Option K)	Artificial Intelligence and Machine Learning	10	Optional	2
TRUR2291 (Option L)	Mobile App Development	10	Optional	2

- o **Part-time Indicative Route**

YEAR 1 (LEVEL 4)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR1280	Website Development	20	Core	1
TRUR1278	Introductory Programming	20	Core	1/2
TRUR1300	Software Development Practices	20	Core	2

YEAR 2 (LEVEL 4) (Select one option per semester)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR1279	Data Management	20	Core	1
TRUR1281	Systems Analysis and Design	20	Core	2
TRUR1282 (Option A)	Maths for Computing	10	Optional	1
TRUR1283 (Option B)	User Centered Design	10	Optional	1
TRUR1284 (Optional C)	Boolean logic and Assembly	10	Optional	1
TRUR1285 (Option D)	Security and Cryptography	10	Optional	2
TRUR1286 (Option E)	System Architecture	10	Optional	2
TRUR1287 (Option F)	The Digital Society	10	Optional	2

YEAR 3 (LEVEL 5)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR2281	Agile Project Management	20	Core	1/2
TRUR2282	Data Structures and Algorithms	20	Core	1/2
TRUR2283	Object Oriented Programming	20	Core	1/2

YEAR 4 (LEVEL 5)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR2284	Software Testing	10	Core	1
TRUR2285	Independent Project	20	Core	2
TRUR2286 (Option G)	Industrial Placement	10	Optional	1/2
TRUR2287 (Option H)	Server-Side Programming	10	Optional	1/2
TRUR2288 (Option I)	Data Analytics and Big Data	10	Optional	1
TRUR2289 (Option J)	Developing Applications	10	Optional	1
TRUR2290 (Option K)	Artificial Intelligence and Machine Learning	10	Optional	2
TRUR2291 (Option L)	Mobile App Development	10	Optional	2

7. Programme Aims

A1. To develop an understanding of software development derived from a variety of sources and to communicate the principles in a manner appropriate to the programme of study.

A2. To develop the ability to demonstrate skills in a range of software development techniques, concepts, and practices, including carrying out professional engagement.

A3. To develop the knowledge, understanding and skills required for progression into employment or further study in the software development or wider digital industry.

A4. To increase students' capacity for continuing personal development and effectiveness in adult and working life, by developing wider skills

A5.   To develop students' commitment to subsequent role development and lifelong learning, acting autonomously to achieve learning needs and acknowledging the need to meet relevant occupational standards.

8. Programme Intended Learning Outcomes

8.1.   Knowledge and understanding

On successful completion graduates should have developed:

8.1.1.   An understanding of the fundamental programming concepts.

8.1.2.   Knowledge and understanding of wider digital concepts and technology.

8.1.3.   Knowledge of their responsibilities as software engineers and IT professionals, with an awareness of cultural, economic, ethical, legal, political, and social dynamics which shape effective working environments.

8.2.   Cognitive and intellectual skills

On successful completion graduates should have developed:

8.2.1.   The ability to plan, design, implement and test software solutions which effectively solve problems and meet requirements.

8.2.2.   Skills for academic and independent study, applying them appropriately.

8.2.3.   The knowledge required to evaluate the use of logic, algorithms, and data structures relevant to software development.

8.2.4.   The application of logical thinking to solve complex problems using critical thinking, initiative and analysis and evaluation in the workplace.

8.3.   Key and transferable skills

On successful completion graduates should have developed the ability to:

8.3.1.   Identify, locate, and access information, developing the skills and abilities for independent learning,

8.3.2.   Communicate software solutions, ideas, and technical concepts to technical and non-technical stakeholders.

8.3.3.   Work with others to set goals, integrate information, and make appropriate decisions.

8.3.4.   Face evolving challenges and adapt to emerging technology.

8.3.5. Work effectively in a group or a team, showing ability to listen, communicate, and contribute.

8.4. Employment related skills

On successful completion graduates should have developed:

8.4.1. The ability to act with integrity and to follow ethical, legal and regulatory requirements, ensuring the protection of personal data, safety and security.

8.4.2. The ability to reflect on how teams work effectively to produce software and how to contribute appropriately.

8.4.3. A proficiency with a variety of programming languages, development techniques and industry best practices.

8.5. Practical skills

On successful completion graduates should be able to:

8.5.1. Apply an appropriate software development approach according to the relevant paradigm (for example object oriented, event driven or procedural).

8.5.2. Apply structured techniques to problem solving, can debug code and can understand the structure of programmes to identify and resolve issues.

8.5.3. Work independently and takes responsibility. For example, has a disciplined and responsible approach to risk, and stays motivated and committed when facing challenges.

8.5.4. Apply specialist skills across the wider computing and software development discipline including data management, website development, analytics and computational thinking.

8.5.5. Follow a systematic approach to software development using appropriate software development methodologies.

8.5.6. Apply frameworks and methodologies, industry best practice and convention.

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

All applicants must have GCSE (or equivalent will be considered) Maths and English at Grade 4/C or above plus a relevant level 3 qualification. Applicants will be interviewed to assess the experience/capabilities for successful entry and completion of the course.

Entry Requirements for FdEng Software Engineering	
Level 3: at least one of the following in a relevant subject: - AS/A Levels - T levels - Advanced Level Diploma - BTEC National Certificate/Diploma - VDA: AGNVQ, AVCE, AVS - Access to HE or Year 0 provision - International Baccalaureate - Irish/Scottish Highers/Advanced Highers	48 UCAS points from relevant Level 3 qualification. Achievement of an Access to HE Diploma
Work Experience	Considered on an individual basis through an interview process.
Other HE qualifications / non-standard awards or experiences	Considered on an individual basis through an interview process.
APEL / APCL possibilities	APEL/APCL will be considered as per University of Plymouth Regulations
Interview / Portfolio requirements	All students will be interviewed
Independent Safeguarding Agency (ISA) / Disclosure and Barring Service (DBS) clearance required	Students are expected to purchase a current DBS, if required for placement.

10. Non Standard Regulations (NB: all non-standard regulations must be approved by QSSC)

The programme includes 10 credit option modules, which at the time of writing is a non-standard regulation. The purpose being to support flexibility for mapping against apprenticeship standard(s), Higher Technical Qualifications, and, following consultation with the sector in Cornwall, the opportunity for retraining and upskilling through expected Lifelong Learning Entitlement opportunity.

11. Transitional Arrangements for existing students looking to progress onto the programme

Students on the existing FdSc Cyber Security or FdSc Computing Technologies will run through to completion with a new cohort starting the FdEng Software Engineering in September 2023. The FdEng Software engineering, FdSc Computing Technologies and FdSc Cyber Security are expected to run in parallel and so there are no transitional arrangements required.

12. Progression

Students graduating from the FdEng Software Engineering may progress onto higher levels of study such as:

- BSc (Hons) Applied Computing Technologies at Truro and Penwith
- BSc (Hons) Computer Science at the University of Plymouth
- BSc (Hons) Computer Science (Software Engineering) at the University of Plymouth

Upon successful completion of the FdEng Software Engineering, students may be suited to work in a variety of settings and these opportunities include, but are not limited to the following job roles:

- Software Developer
- Application Developer
- Games Developer
- Programmer
- Software Tester
- Mobile App developer
- AI Developer
- Big Data analyst
- Network Engineer
- Network Technician
- Cyber Security Professional

As well as Student Services and Personal Tutor support, Truro and Penwith College also has an HE Employability and Careers advisor available for guidance for students and graduates.

Appendix A: Programme Specification Mapping

Module contribution to the meeting of Programme Learning Outcomes

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

	Module	8.1.1	8.1.2	8.1.3	8.2.1	8.2.2	8.2.3	8.2.4	8.3.1	8.3.2	8.3.3	8.3.4	8.3.5	8.4.1	8.4.2	8.4.3	8.5.1	8.5.2	8.5.3	8.5.4	8.5.5	8.5.6	Compensation Y/N	Assessment Element(s) and weightings
Level 4	TRUR1300 Software Development Practices			x	x				x		x				x								Y	C1 – 50 C2 – 50
Level 4	TRUR1278 Introductory Programming	x			x	x	x											x					Y	C1 – 70 P1 – 30
Level 4	TRUR1280 Website Development		x		x	x							x		x								Y	P1 – 100
Level 4	TRUR1279 Data Management		x	x			x							x						x			Y	C1 – 70 P1 – 30
Level 4	TRUR1281 Systems Analysis and Design		x					x	x					x				x			x		Y	C1 – 50 C2 – 50
Level 4 LOs		X	X	X	X	X	X	X	X	X		X	X	X	X	X		X		X	X			
Level 5	TRUR2281 Agile Project Management			x	x				x	x	x		x		x	x	x				x	x	Y	C1 – 50 P1 – 50
Level 5	TRUR2282 Data Structures and Algorithms		x			x	x													x			Y	C1 – 50 C2 – 50
Level 5	TRUR2283 Object Oriented Programming	x			x	x	x	x		x						x		x					Y	C1 – 50 P1 – 50
Level 5	TRUR2285 Independent Project	x		x	x		x	x	x	x	x	x		x	x	x	x	x	x		x	x	N	C1 – 70 P1 – 30
Level 5	TRUR2284 Software Testing		x		x		x											x					Y	C1 – 100
Level 5 LOs		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X		
Confirmed Award LOs																								

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

		8.1 Knowledge & understanding			8.2 Cognitive & intellectual skills				8.3 Key & transferable skills					8.4 Employment related skills			8.5 Practical skills						Compensation Y/N	Assessment Element(s) and weightings E1- exam T1- test C1- coursework P1 - practical
		8.1.1	8.1.2	8.1.3	8.2.1	8.2.2	8.2.3	8.2.4	8.3.1	8.3.2	8.3.3	8.3.4	8.3.5	8.4.1	8.4.2	8.4.3	8.5.1	8.5.2	8.5.3	8.5.4	8.5.5	8.5.6		
Level 4	TRUR1282 Maths for Computing		x				x	x												x			Y	T1 – 100
	TRUR1285 Security and Cryptography		x	x								x									x		Y	C1 – 100
	TRUR1286 System Architecture		x				x									x				x			Y	C1 – 100
	TRUR1283 User Centred Design		x	x	x		x	x															Y	C1 – 100
	TRUR1284 Boolean logic and Assembly		x				x									x					x		Y	C1 – 100
	TRUR1287 The Digital Society			x					x		x	x		x							x	x	Y	C1 – 100
Level 4 LOs			X	X	X		X	X	X	X	X	X		X		X				X	X	X		
Level 5	TRUR2288 Data Analytics and Big Data		x																	x			Y	C1 – 100
	TRUR2289 Developing Applications	x			x			X		x					x	x				x			Y	C1 – 100
	TRUR2286 Industrial Placement			x								x		x						x			Y	C1 – 100
	TRUR2287 Server-Side Programming	x	x		x	x		x							x	x				x			Y	C1 – 100
	TRUR2290 Artificial intelligence and Machine Learning		x	x			x							x						x			Y	C1 – 100
	TRUR2291 Mobile App Development	x				X		x								x				x	x		Y	C1 – 100
Level 5 LOs		X	X	X	X	X	X	X		X		X		X		X	X	X		X	X			
Confirmed Award LOs																								

- ## Level 4 Module Records

YEAR 1 (LEVEL 4)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR1280	Website Development	20	Core	1
TRUR1278	Introductory Programming	20	Core	1/2
TRUR1282 (Option A)	Maths for Computing	10	Optional	1
TRUR1283 (Option B)	User Centred Design	10	Optional	1
TRUR1284 (Optional C)	Boolean Logic and Assembly	10	Optional	1
TRUR1281	Systems Analysis and Design	20	Core	2
TRUR1279	Data Management	20	Core	1
TRUR1300	Software Development Practices	20	Core	2
TRUR1285 (Option D)	Security and Cryptography	10	Optional	2
TRUR1286 (Option E)	System Architecture	10	Optional	2
TRUR1287 (Option F)	The Digital Society	10	Optional	2

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1280	**MODULE TITLE: Website Development**

CREDITS: 20   **FHEQ LEVEL:** 4   **HECoS CODE:** 100375 web and multimedia design

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module enables learners to design and develop dynamic websites. Throughout the module learners will understand and apply appropriate web protocols, languages and standards to create functional high-quality websites. Emphasis will be on the effective use of information architecture, responsive design and web accessibility to enhance user experience.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*					
C1 (Coursework)		**E1** (Examination)		**P1** (Practical)	100%
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
- To develop a working knowledge of the skills, languages, standards and concepts required to create functional, high-quality and accessible websites.
- To be able to design websites appropriate for various users and business cases.
- To be able to deploy a website for online use.
- To recognise and apply appropriate processes and techniques in the design of mobile first and responsive web applications.
- Work effectively as part of a group.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of usability, accessibility, security considerations and use of standards when designing websites.	8.1.2
2. Use appropriate coding languages to develop and test functional dynamic web pages.	8.4.3, 8.2.1
3. Demonstrate the ability to make appropriate judgements when selecting frameworks for website development.	8.2.2
4. Work effectively as part of a group.	8.3.5

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	**NATIONAL COST CENTRE:** 121
MODULE LEADER: Naomi Johns-Dyer	**OTHER MODULE STAFF:** John Glazebrook, Mark Williams

SUMMARY OF MODULE CONTENT:

This module covers various design and development concepts relevant to the design and development of dynamic websites including: usability, accessibility, design and development standards, security in relation to websites, website development technologies, configuration and maintenance of web servers, client-side programming, markup languages, frameworks, testing websites against requirements.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*

Scheduled Activities	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Lecture	25	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	20	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Practical	P1 – Design and development of a website (ALO 1, 2, 3, 4) – group work.	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Practical	P1 – Design and development of a website (ALO 1, 2, 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1278	**MODULE TITLE: Introductory Programming**	
CREDITS: 20	**FHEQ LEVEL:** 4	**HECoS CODE:** 100374 software engineering
PRE-REQUISITES: None	**CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

The module is an introduction to fundamental programming concepts. Throughout this module, learners will develop the knowledge required to understand, design and code computer programs and will understand and apply the principles underlying the software development process.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*						
C1 (Coursework)	70%	**E1** (Examination)			**P1** (Practical)	30%
T1 (In-Class Test)		**O1** (online open book assessment)				

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To develop an understanding of programming through designing and developing code to given requirements.
- To implement, test and debug simple programs.
- To introduce the principles of algorithms.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Develop simple programs that demonstrate the use of fundamental programming concepts such as input/outputs, operations, conditions, and iteration.	8.1.1, 8.5.2
2. Demonstrate an understanding of the basic principles and best practice in software development.	8.2.2
3. Express algorithmic solutions to problems according to a specification.	8.2.1, 8.2.3
4. Apply suitable program testing and debugging strategies.	8.1.1, 8.5.2

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1 & 2
MODE OF DELIVERY: Campus Taught	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	OTHER MODULE STAFF: John Glazebrook, Mark Williams

SUMMARY OF MODULE CONTENT:

Introduction to creating solutions in code to a given problem using a range of programming fundamentals such as input/output, conditions, operations, iteration. Methods of testing and debugging code. Using pseudocode and flowcharts to express algorithms. Coding best practice and standard convention. Introduction to the differences between interpreted, intermediate and compiled languages.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	25	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	20	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 - Developing programs to solve problems. (ALO 1, 3, 4)	100%
Practical	P1 – Best Practice and Convention. (ALO 2)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 - Developing programs to solve problems. (ALO 1, 3, 4)	100%
Practical	P1 – Demonstrating Best Practice (ALO 2)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	Approved by: Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1282	**MODULE TITLE: Maths for Computing**

CREDITS: 10   **FHEQ LEVEL:** 4   **HECoS CODE:** 101029 computational mathematics

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module explores the mathematical principles that underpin programming. Students will be equipped with advanced mathematical skills using data representation and applying algorithms to create efficient and well structured programs.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*					
C1 (Coursework)		**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)	100%	**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Understand how algorithms work and be able to write algorithms to solve problems.
- Use flowcharts to represent algorithms.
- Apply different types of sorting algorithms to data.
- Use graphs and networks to create mathematical models.
- Solve linear programming problems.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate the sorting of data using different sorting methods.	8.2.3, 8.5.4
2. Use flow charts to represent algorithms.	8.2.3, 8.5.4
3. Use linear programming methods to solve problems graphically.	8.2.4, 8.5.4
4. Apply an appropriate algorithm to solve a problem.	8.1.2, 8.5.4

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1
MODE OF DELIVERY: Blended learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: Mark Williams	OTHER MODULE STAFF:

SUMMARY OF MODULE CONTENT:
This module covers the underpinning mathematical principles of computing and programming including, decision maths, logic, algorithms, linear programming, critical path analysis, route inspection, graphs, sorting and searching.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Test	T1 – Application of Mathematics for Programming (ALO 1,2,3,4)	100%

REFERRAL ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Test	T1 – Application of Mathematics for Programming (ALO 1,2,3,4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1283	**MODULE TITLE: User Centred Design**

CREDITS: 10   **FHEQ LEVEL:** 4   **HECoS CODE:** 100374 software engineering; 100736 human-computer interaction

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module allows learners to understand the concepts and theories, and practical skills needed to create high quality, usable software interfaces based on a knowledge and understanding of user requirements.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*						
C1 (Coursework)	100%	**E1** (Examination)			**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)				

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Recognise how users interact with systems.
- Design interfaces with users' requirements as the primary priority.
- Design systems that are accessible for all.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Analyse the link between user requirements, user centred design, and technology capabilities.	8.1.2
2. Demonstrate understanding of recommended design principles, best practice and guidance for creating user centered interfaces.	8.3.1
3. Create user centred designs for interfaces based on user and accessibility requirements.	8.1.3, 8.2.1, 8.3.2

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	OTHER MODULE STAFF: Mark Williams, John Glazebrook

SUMMARY OF MODULE CONTENT:
Design principles, user requirements analysis, British and International standards for UCD, Usability heuristics, accessibility, the human centred design toolkit, user profiles and personas and prototyping.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Create User Centred Designs (ALO 1, 2, 3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Create User Centred Designs (ALO 1, 2, 3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1284   MODULE TITLE: Boolean Logic and Assembly

CREDITS: 10   **FHEQ LEVEL:** 4   **HECoS CODE:** 100374 software engineering

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module introduces a deeper understanding of Boolean logic and assembly language to develop programming skills to solve programming problems effectively and gain a deeper understanding of computer architecture.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*					
C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Develop a knowledge of binary, hexadecimal and octal numbers.
- Develop an understanding of Boolean logic, be able to apply this to problems.
- Develop an understanding of assembly programming language and apply it to solve problems.
- Use assembly language to solve problems.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Understand different positional numbering systems and why they are used.	8.1.2
2. Apply understanding of Boolean logic to design, implement, evaluate and document a logic circuit.	8.2.3
3. Demonstrate an understanding of the use of assembly code to solve problems.	8.4.3, 8.5.5

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 2
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: John Glazebrook	OTHER MODULE STAFF:

SUMMARY OF MODULE CONTENT:
Boolean logic, Boolean algebra, expressions and logic gates. Assembly language including RISC (Reduced Instruction-Set Computer), DSP (Digital Signal Processor), CISC: Complex Instruction Set Computer and VLIW: Very Long Instruction Word. Binary (bit, nibbles, byte, word) Hex, Oct, ASCII.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1– Create a 4-bit adder (ALO 1, 2,3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Application of Boolean Logic and Assembly (ALO 1, 2,3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1279	**MODULE TITLE: Data Management**	
CREDITS: 20	**FHEQ LEVEL:** 4	**HECoS CODE:** 100754 databases; 100755 data management
PRE-REQUISITES: None	**CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module introduces the concepts of the management of organisational data using database management systems. Learners will design and develop relational and NoSQL databases, as well gaining an understanding of the procedures and protocols and ethics that require consideration when managing, controlling and securing data.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*					
C1 (Coursework)	70%	**E1** (Examination)		**P1** (Practical)	30%
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Introduce the concept of database systems for information management.
- To introduce the concept of relational modelling and the key data management concepts required to store data appropriately in databases.
- Learners will design, implement and test relational and NoSQL databases, and will apply queries to data.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Explain the principles and uses of relational and non-relational databases.	8.1.2
2. Demonstrate appropriate storage and treatment of GDPR sensitive data.	8.1.3, 8.4.1
3. Design, develop and test a range of data models and schemas.	8.2.3, 8.5.4
4. Undertake query processing on data held in databases.	8.5.4

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	OTHER MODULE STAFF: Mark Williams, John Glazebrook

SUMMARY OF MODULE CONTENT:
This module covers:
Database Design, ER modelling and relational database modelling
Different types of databases including Relational and NoSQL
Data management protocols, processes and legislatory requirements and the processing data including queries.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	25	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	20	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Understanding DBMS's (ALO 1)	100%
Practical	P1 - Developing data management systems (ALO 2, 3, 4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Principles of DBMS (ALO 1)	100%
Practical	P1 – Developing DBMS (ALO 2, 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1281   **MODULE TITLE:** Systems Analysis and Design

CREDITS: 20   **FHEQ LEVEL:** 4   **HECoS CODE:** 100753 systems analysis and design

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module covers the use of UML and OO techniques for systems analysis and design. Learners will use a "Systems thinking" approach to design, and will use critical thinking and analysis to evaluate existing systems and recommend design approaches to create improved systems.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	100%	E1 (Examination)		P1 (Practical)	
T1 (In-Class Test)		O1 (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Gain an understanding of Systems analysis and design principles
- Use a "Systems Thinking" approach to designing software
- Apply UML techniques to system designs
- Recognise and apply the object-oriented systems theory.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of various approaches to systems analysis and design, and be able to identify appropriate use cases, as well as strengths and weaknesses of different methodologies.	8.1.2, 8.3.1
2. Use appropriate methods and techniques to produce analysis and designs for a given scenario.	8.4,1, 8.5.2, 8.5.5
3. Evaluate the systems analysis tools and techniques that could be used in different scenarios.	8.2.4
4. Document the systems analysis and design process.	8.5.2, 8.5.5

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 2
MODE OF DELIVERY: Campus Taught	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: Mark Williams	OTHER MODULE STAFF: Naomi Johns-Dyer, John Glazebrook

SUMMARY OF MODULE CONTENT:

This module introduces:
- The roles and responsibilities within the software development lifecycle and how teams work effectively to produce software.
- UML
- The object-oriented design processes
- Requirements specifications
- The roles and responsibilities of the project life cycle within your organisation.
- How best to communicate in a team using various communication methods and how to adapt appropriately to different audiences.
- The similarities and differences and appropriate use cases for different software development methodologies.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	25	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	20	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 - The Systems analysis and design approach (ALO 1, 3)	50%
	C2 – Using systems analysis and design methods (ALO 2, 4)	50%
		100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Systems analysis and Design in Practice (ALO 1, 2, 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1300	**MODULE TITLE: Software Development Practices**	
CREDITS: 20	**FHEQ LEVEL:** 4	**HECoS CODE:** 100753 systems analysis and design
PRE-REQUISITES: None	**CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module introduces the knowledge, skills and understanding of the concepts required to work in the software development field. Through this module, learners will understand the phases of the software development lifecycle and the roles and responsibilities of developers as well developing an understanding of recommended working practice.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	100%	E1 (Examination)		P1 (Practical)	
T1 (In-Class Test)		O1 (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To develop an understanding of the roles and responsibilities within the software development lifecycle and how teams work effectively to produce software.
- To recognise and be able to apply industry working or best practices to software development projects.
- how teams work effectively to produce software and how to contribute appropriately

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of the key responsibilities of an individual in a software developer role within each stage of the software development lifecycle..	8.1.3, 8.4.2
2. Recommend suitable software design approaches and solutions based on client requirements or technical specification.	8.2.2, 8.3.2
3. Recommended appropriate approaches to continuous integration, version, and source control.	8.2.2, 8.3.2
4. Investigate emerging trends in software development	8.3.4

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 2
MODE OF DELIVERY: Campus Taught	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: John Glazebrook	OTHER MODULE STAFF: Naomi Johns-Dyer, Mark Williams

SUMMARY OF MODULE CONTENT:

This module covers the skills and knowledge necessary to work in the software development industry.

Content includes:

- Software Development Lifecycles, roles and responsibilities, and methodologies.
- Managing development project effectively (including integration and version control).
- Designing software to meet client or technical requirements.
- Quantitative and qualitative analysis.
- Functional and non-functional requirements.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	25	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	20	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Developing Software (ALO 1, 4)	50%
	C2 – Recommending approaches to Software Development (ALO 2, 3)	50%
		100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Software Development Practices (ALO 1, 2, 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1285	**MODULE TITLE:** Security and Cryptography	
CREDITS: 10	**FHEQ LEVEL:** 4	**HECoS CODE:** 100376 computer and information security
PRE-REQUISITES: None	**CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

Learners will be introduced to various security technologies available to both maintain and keep secure systems. Learners will investigate and explore basic cryptographic methods used in data and data communications. Learners will apply both theoretical and practical security and cryptography methods during this module.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*					
C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Investigate and develop a deep knowledge of current security technologies.
- Apply knowledge and understanding to provide solutions to IT security problems posed.
- To be able to determine cryptographic concepts, their importance and application within industry.
- To recognise and predict potential threats to a system, thus creating an active defence environment.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Compare and contrast current security technology trends.	8.1.2
2. Demonstrate an understanding of the security features that can be used to secure website and software systems.	8.1.3, 8.5.5
3. Analyse and evaluate the use of cryptographic concepts to solve security issues.	8.3.4

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 2
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: John Glazebrook	OTHER MODULE STAFF: Naomi Johns-Dyer

SUMMARY OF MODULE CONTENT:

Learners will be introduced to various security technologies available to both maintain and keep systems secure. Learners will investigate and explore basic cryptographic methods used in data and data communications including PKI, Web of Trust, Digital Signatures and hashes. Learners will apply both theoretical and practical security measures throughout this module.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Securing Software (ALO 1, 2, 3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Securing Software (ALO 1, 2, 3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: Jan-23	**Approved by:** Date:

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1286   **MODULE TITLE:** System Architecture

CREDITS: 10   **FHEQ LEVEL:** 4   **HECoS CODE:** 100366 computer science; 100734 computer architectures

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module provides learners with an understanding of operating systems and the hardware and software architectures within computer systems. Learners will explore how systems should be created and programs compiled for different system architectures.

ELEMENTS OF ASSESSMENT – *see [Definitions of Elements and Components of Assessment](#)*					
C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Understand the structures and functions of computer systems.
- Know how software interacts with hardware.
- Recognise the relationship between hardware and software.
- Develop an understanding of how code is compiled on different systems.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of operating systems and the relationship with hardware.	8.1.2
2. Demonstrate an understanding of how code is compiled for different architectures.	8.5.4
3. Write simple programs for microprocessors or microcontrollers.	8.2.3, 8.4.3

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	**NATIONAL COST CENTRE:** 121
MODULE LEADER: Naomi Johns-Dyer	**OTHER MODULE STAFF:** John Glazebrook, Mark Williams

SUMMARY OF MODULE CONTENT:

Systems architectures, components of computers, differences between processor types. Microprocessors and microcontrollers. Compiling programs for different architectures, Memory, I/O. Programming microcontrollers and microprocessors.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*

Scheduled Activities	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Software for Architectures (ALO 1, 2, 3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Software for Architectures (ALO 1, 2, 3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR1287	**MODULE TITLE: The Digital Society**	
CREDITS: 10	**FHEQ LEVEL:** 4	**HECoS CODE:** 100471 social sciences, 100793 ethics
PRE-REQUISITES: None	**CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module provides the opportunity for learners to consider the impact of technology on society, how digital advancements affects humans and the ethical and moral considerations relating to technology.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*					
C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Recognise how technology affects society including digital welfare, digital divide and inclusion.
- Explore the moral and ethical considerations relating to technology.
- Recognise the theories and concepts behind digital society.
- Analyse the impact of new and emerging technology.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Explore the impact of digital development on society, culture and education.	8.3.1
2. Apply theories and concepts relating to the impact of digital on humans.	8.3.3, 8.5.5
3. Analyse the ways in which technology can address or intensify social issues.	8.5.6
4. Demonstrate an understanding of the ethical. Moral and legal considerations relating to the emergence of technology.	8.1.3, 8.3.4, 8.4.1

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-23	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 2
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2023-24	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	**OTHER MODULE STAFF:** John Glazebrook, Mark Williams
SUMMARY OF MODULE CONTENT: Learners will research and debate topics relating to the impact of technology on society including: The digital divide, impact on behaviour, society, education, health and wellbeing and culture. Inclusion and exclusion, data capitalism, cybernetics, social media, cyberpsychology. Morals, ethics and legal considerations, access to technology, innovation and emerging technology.	

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – The impact of digital on society (Group Work). (ALO 1, 2, 3,4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – The impact of digital on society. (ALO 1, 2, 3,4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

- Level 5 Module Records

YEAR 2 (LEVEL 5)				
Module Code	**Module Title**	**Credits**	**Core / Optional**	**Term / Semester**
TRUR2281	Agile Project Management	20	Core	1/2
TRUR2282	Data Structures and Algorithms	20	Core	1/2
TRUR2283	Object Oriented Programming	20	Core	1/2
TRUR2284	Software Testing	10	Core	1
TRUR2285	Independent Project	20	Core	2
TRUR2286 (Option G)	Industrial Placement	10	Optional	1/2
TRUR2287 (Option H)	Server-Side Programming	10	Optional	1/2
TRUR2288 (Option I)	Data Analytics and Big Data	10	Optional	1
TRUR2289 (Option J)	Developing Applications	10	Optional	1
TRUR2290 (Option K)	Artificial Intelligence and Machine Learning	10	Optional	2
TRUR2291 (Option L)	Mobile App Development	10	Optional	2

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2281	**MODULE TITLE:** Agile Project Management	
CREDITS: 20	**FHEQ LEVEL:** 5	**HECoS CODE:** 100812 project management
PRE-REQUISITES: None	**CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

The Agile project methodology is widely used in the Software Development industry, this module introduces the core concepts and practices of Agile development, including the key Agile frameworks and principles of the Agile manifesto.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	50%	**E1** (Examination)		**P1** (Practical)	50%
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Review the use of Agile within the Software Development Industry.
- Follow the principles of the Agile Manifesto.
- Develop an understanding of the key Frameworks within Agile.
- Apply Agile principles to practical projects.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of the key principles of Agile project management and appropriate use cases.	8.3.1, 8.4.2
2. Undertake project planning activities using an Agile approach.	8.2.2, 8.3.2, 8.3.3, 8.4.3, 8.5.1, 8.5.5,
3. Apply an appropriate Agile Framework to a practical project.	8.1.3, 8.2.2, 8.3.3, 8.4.3, 8.5.1
4. Evaluate the use of Agile methods.	8.1.3, 8.5.6

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1 & 2
MODE OF DELIVERY: Campus Taught	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	**NATIONAL COST CENTRE:** 121
MODULE LEADER: Naomi Johns-Dyer	**OTHER MODULE STAFF:** Mark Williams
SUMMARY OF MODULE CONTENT:	

Introduction to Agile project management and the core concepts of Agile using the Agile manifesto.

Overview of the key Agile frameworks including SCRUM and KANBAN, DSDM. How to apply the Agile methodology to practical projects. Agile practices such as pair and mob programming. The roles and responsibilities within the Agile team.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*

Scheduled Activities	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Lecture	25	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	20	
Employer led activity	5	Industry specialist delivery. This will involve industry employers delivering workshops and training to learners.
Guided Independent Study	150	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – The Agile Method (ALO 1,2)	100%
Practical	P1 – Agile in Practice (ALO 3, 4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – The Agile Method (ALO 1,2)	100%
Practical	P1 – Agile in Practice (ALO 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2282   **MODULE TITLE:** Data Structures and Algorithms

CREDITS: 20   **FHEQ LEVEL:** 5   **HECoS CODE:** 100751 information modelling; 100956 programming

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module covers the use of algorithms and data structures for application in programming-based activity. The module will equip learners with the necessary skills to apply complex algorithms and data structures in their regular practice as a Software Engineer.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Design complex algorithms to solve problems.
- Create code based on algorithmic design.
- Recognise the types of data structures and their use cases.
- Design, develop and test data the use of data structures.
- Understand the need for a structured approach in the design of effective software

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Algorithmically use pseudocode to solve a problem.	8.1.2, 8.2.3
2. Implement algorithms in code.	8.2.3, 8.2.4
3. Design and develop an appropriate data structure for a given scenario.	8.1.2, 8.2.3, 8.5.4
4. Test and evaluate the use of a data structure based on technical requirements.	8.2.3, 8.5.4

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1 & 2
MODE OF DELIVERY: Campus Taught	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	NATIONAL COST CENTRE: 121
MODULE LEADER: John Glazebrook	OTHER MODULE STAFF: Naomi Johns-Dyer

SUMMARY OF MODULE CONTENT:

Data types, operators and expressions. Methods, classes and inheritance. Flowcharts and Pseudo-code conventions. Tree algorithms and graphs, linear data structure, lists, dictionaries and sorting. Data manipulation, iterative and recursive algorithms.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	30	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	15	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Developing Algorithms (ALO 1, 2)	50%
	C2 – Using Data Structures (ALO 3, 4)	50%
		100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Using Data Structures and Algorithms (ALO 1, 2, 3,4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2283   **MODULE TITLE: Object Oriented Programming**

CREDITS: 20   **FHEQ LEVEL:** 5   **HECoS CODE:** 100960 object-oriented programming

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module introduces students to the concepts and practice of object-oriented programming. Through a largely practical approach, students will learn how to develop applications using object-oriented programming techniques.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	50%	**E1** (Examination)		**P1** (Practical)	50%
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
- To develop an understanding of object-oriented programming techniques.
- To develop skills in applying OOP techniques to solve problems.
- To explore the development of GUI components.
- To investigate the use of OOP languages.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Understand the principles of object-oriented programming.	8.4.3
2. Analyse given specifications in order to design and develop console applications.	8.1.1, 8.2.1, 8.2.2, 8.2.3, 8.4.3
3. Apply OOP principles to design, implement, evaluate and document GUI applications.	8.2.2, 8.2.3, 8.2.4, 8.4.3, 8.5.2
4. Demonstrate analytical understanding of the use of object-oriented programming in a range of contexts.	8.3.2

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1 & 2
MODE OF DELIVERY: Campus Taught	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	NATIONAL COST CENTRE: 121
MODULE LEADER: John Glazebrook	OTHER MODULE STAFF: Naomi Johns-Dyer, Mark Williams

SUMMARY OF MODULE CONTENT:
This module introduces object-oriented programming. An examination of OOP languages and the fundamental concepts of object-oriented programming will be achieved through a combination of theory and practical programming activity. Learners will develop skills in the design and implementation of applications in a range of contexts.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	30	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	15	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Object Oriented Console Applications (ALO 1, 2)	100%
Practical	P1 – Building GUI's (ALO 3, 4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Developing Object Oriented Programmes (ALO 1, 2)	100%
Practical	P1 – Developing GUI's (ALO 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2284	**MODULE TITLE: Software Testing**
CREDITS: 10	**FHEQ LEVEL:** 5 **HECoS CODE:** 100374 software engineering
PRE-REQUISITES: None	**CO-REQUISITES:** None **COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module explores the role of the software tester and the various types of testing available within the software development process. Learners will design and write their own tests using a recognised testing methodology to quality and functionality test software. Learners will apply regular testing as part of their practice thus impacting upon the performance and efficiency of the software system and their own skills as a developer.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*						
C1 (Coursework)	100%	**E1** (Examination)			**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)				

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Understand the purpose of testing.
- Recognise the different types of testing.
- Write test cases for given software projects.
- Perform testing on software solutions and make recommendations for the improvement of software based on analysis of test results.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Analyse the different types of testing and identify appropriate use cases.	8.1.2
2. Identify and create test scenarios determining the expected outputs and recommended actions	8.2.1, 8.5.2
3. Collect, interpret and develop representative and realistic test data.	8.2.1, 8.5.2
4. Conduct a range of test types and analyse results to debug errors.	8.2.1, 8.2.4, 8.5.2

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1
MODE OF DELIVERY: Blended Learning	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	NATIONAL COST CENTRE: 121
MODULE LEADER: Mark Williams	OTHER MODULE STAFF: Naomi Johns-Dyer, John Glazebrook

SUMMARY OF MODULE CONTENT:
Different types of testing including functional and non-functional, black/white box and change-related testing. Test levels including Unit testing, integration testing, system testing, user acceptance testing. Testing on different types of software applications. Creating test data and analysing test results.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Testing Software (ALO 1, 2, 3, 4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Testing Software (ALO 1, 2, 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	Approved by: Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2285	**MODULE TITLE:** Independent Project
CREDITS: 20 **FHEQ LEVEL:** 5	**HECoS CODE:** 100374 software engineering; 100812 project management
PRE-REQUISITES: None **CO-REQUISITES:** None	**COMPENSATABLE:** No

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module provided practical application in planning and executing a project to completion. Throughout this module, learners will manage their own practical programming-based project from the initial project idea, through to the analysis and design phase, implementation, testing and evaluation.

ELEMENTS OF ASSESSMENT – see [Definitions of Elements and Components of Assessment](#)					
C1 (Coursework)	70%	**E1** (Examination)		**P1** (Practical)	30%
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To apply tools and techniques for the management of medium to large projects through a typical project lifecycle.
- To develop programming skills, creating a high-quality deliverable project.
- To develop practical experience in managing a project from the initial idea stage through to the evaluation and reflection stage.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an analytical understanding of the principles and practices of project management.	8.2.3, 8.4.2, 8.5.5, 8.5.6
2. Produce analysis and design documentations for a practical programming-based project suitable for technical and non-technical audiences.	8.1.3, 8.2.1, 8.3.1, 8.3.2, 8.4.1, 8.5.5
3. Develop, test and review a project deliverable against client or technical specifications.	8.1.1, 8.2.1, 8.2.4, 8.3.3, 8.3.4, 8.4.2, 8.4.3, 8.5.1,8.5.2,
4. Demonstrate a reflective and evaluative understanding of the project management process and overall execution of the project.	8.2.4, 8.5.3, 8.5.5

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College

DATE(S) OF APPROVED CHANGE:	SEMESTER: 2
MODE OF DELIVERY: Blended Learning	

Notes: Non compensatable due to this module being the only core module which contributes towards ALO 8.5.3 – The ability to apply frameworks and methodologies, industry best practice and convention.

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	OTHER MODULE STAFF: John Glazebrook, Mark Williams

SUMMARY OF MODULE CONTENT:

This module gives students the opportunity to explore techniques used in the management of programming related projects. Learners will carry out a project from developing an initial idea or business case, through to all analysis and design, develop/implementation, testing, reviewing, considerations for maintenance and reflective evaluation.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	20	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Project Supervision	25	
Guided Independent Study	155	
Total	**200**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Independent Project (ALO 1, 2, 3)	100%
Practical	P1 – Project Demonstration (ALO 4)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Independent Project (ALO 1, 2, 3)	100%
Practical	P1 – Project Demonstration (ALO 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2286	**MODULE TITLE:** Industrial Placement
CREDITS: 10 **FHEQ LEVEL:** 5	**HECoS CODE:** 101277 work-based learning; 101278 employability skills (personal learning)
PRE-REQUISITES: None **CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module provides learners with experience, knowledge and understanding of the working environment and current issues facing todays software developers and IT professionals. It will provide practical knowledge of working practices, ethical, social responsibilities, processes and legal aspects associated with the industry.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To develop knowledge and understanding of the working environment within the computing and software development industry.
- To develop analytical skills and evaluate professional working practices, responsibilities, and socio-ethical aspects appropriate within industry.
- To gain practical skills by undertaking a meaningful work placement.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate analytical knowledge of industry working practices of through work placement.	8.3.4
2. Analyse and evaluate the role and function of legislation, codes of conduct, and codes of ethics within industry.	8.5.4
3. Report upon the working of, legal and social responsibilities of a professional in practice.	8.1.3, 8.4.1

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1 & 2
MODE OF DELIVERY: Blended Learning	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	OTHER MODULE STAFF:

SUMMARY OF MODULE CONTENT:
This module provides learners with a work-based learning experience, where learners can gain practical knowledge and understanding of the modern IT working environment, including current issues facing today's industry professionals. The module also explores through both working practice and theory social, ethical and legal responsibilities relevant within the computing and software development industry.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	6.5	
Industry Placement	30	
Guided Independent Study	48.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 - Work Practice Portfolio (ALO 1, 2, 3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 - Work Practice Portfolio (ALO 1, 2, 3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2287	MODULE TITLE: Server-Side Programming	
CREDITS: 10	FHEQ LEVEL: 5	HECoS CODE: 100956 programming; 100754 databases
PRE-REQUISITES: None	CO-REQUISITES: None	COMPENSATABLE: Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module explores the methods and languages used to create the back-end systems for dynamic websites. This includes using sessions and cookies, form handling, databases for websites, database driven content, log in systems as well as website security, encryption and authentication.

ELEMENTS OF ASSESSMENT – see [Definitions of Elements and Components of Assessment]						
C1 (Coursework)	100%	E1 (Examination)			P1 (Practical)	
T1 (In-Class Test)		O1 (online open book assessment)				

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Design and develop web applications using appropriate server-side scripting languages.
- Be able to link webpages with databases.
- Develop log in systems and authenticate users

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of the security risks relating to server-side programming, including security implications and appropriate risk mitigation methods.	8.1.2
2. Design, develop and deploy server-side web pages.	8.1.1, 8.2.1, 8.2.2, 8.5.1, 8.5.5
3. Integrate and validate data from databases into dynamic web pages.	8.2.2, 8.4.3
4. Evaluate and test server-side web pages again client and technical requirements.	8.2.4, 8.5.2

DATE OF APPROVAL: Mar-23	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	SCHOOL/PARTNER: Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	SEMESTER: 1 & 2
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2024-25	**NATIONAL COST CENTRE:** 121
MODULE LEADER: John Glazebrook	**OTHER MODULE STAFF:** Naomi Johns-Dyer, Mark Williams

SUMMARY OF MODULE CONTENT:
Sessions and cookies, form handling, databases for websites, database driven content, log in systems, website security including vulnerabilities such as SQL injection, encryption and authentication.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Coursework	C1 – Sever-side development (ALO 1, 2, 3, 4)	100%

REFERRAL ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Coursework	C1 – Sever-side development (ALO 1, 2, 3, 4)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2288	MODULE TITLE: Data Analytics and Big Data	
CREDITS: 10	FHEQ LEVEL: 5	HECoS CODE: 101027 numerical analysis; 100753 systems analysis and design
PRE-REQUISITES: None	CO-REQUISITES: None	COMPENSATABLE: Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module introduces learners to the principles of big data and data analytics. Learners will develop an understanding of the principles of data collection and will analyse real-world big data.

ELEMENTS OF ASSESSMENT – see *Definitions of Elements and Components of Assessment*					
C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Understand the core concepts of big data and analytics.
- Demonstrate the role of big data collection and analysis in decision-making processes.
- Be able to use appropriate tools, techniques and methods for data collection, storage and analysis process.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Explain the different types of data, and the key principles of data mining and machine learning.	8.1.2, 8.5.4
2. Demonstrate application and understanding of various data collection tools.	8.1.2, 8.5.4
3. Conduct analysis on given data.	8.1.2, 8.5.4

DATE OF APPROVAL: Mar-23	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	SCHOOL/PARTNER: Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	SEMESTER: 1
MODE OF DELIVERY: Blended Learning	

Notes:

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 published on the website as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2024-25	**NATIONAL COST CENTRE:** 121
MODULE LEADER: Naomi Johns-Dyer	**OTHER MODULE STAFF:** Mark Williams, John Glazebrook
SUMMARY OF MODULE CONTENT: Learners will be introduced to the fundamentals of big data, and data analytics including: Types of data, and theories and principles relating to data, warehousing and storage of big data, V's of data. Data analytics in business, tools use to analyse data, decision making with data analytics, visualising and modelling data, trends and patterns. Laws and ethics.	

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Analysis of big data (ALO 1, 2,3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Analysis of big data (ALO 1, 2,3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2289	**MODULE TITLE:** Developing Applications

CREDITS: 10 **FHEQ LEVEL:** 5 **HECoS CODE:** 100374 software engineering; 100956 programming

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module covers the development of applications including web and windows applications. Learners will practice full stack development, use frameworks and API's and will create applications to meet defined requirements.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*					
C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Understand the full stack development process.
- Apply an appropriate software development lifecycle to a defined application development.
- Document the design and development process.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Integrate a database, server, and front-end into a full software stack.	8.1.1, 8.3.2, 8.4.3, 8.52
2. Document the process of designing and developing applications using mobile first and responsive design practices.	8.2.1, 8.5.1, 8.5.5,
3. Evaluate the use of API's and frameworks in application development.	8.2.4, 8.52

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 1
MODE OF DELIVERY: Blended Learning	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	**NATIONAL COST CENTRE:** 121
MODULE LEADER: Naomi Johns-Dyer	**OTHER MODULE STAFF:** Mark Williams
SUMMARY OF MODULE CONTENT:	
The software development lifecycle, the full stack development process, building application for defined operating systems and devices. Documenting the development process, selecting appropriate languages and frameworks, API's, creating responsive applications.	

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Developing Applications (ALO 1, 2, 3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Developing Applications (ALO 1, 2, 3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2290	**MODULE TITLE: Artificial Intelligence and Machine Learning**

CREDITS: 10	**FHEQ LEVEL:** 5	**HECoS CODE:** 100359 artificial intelligence; 100992 machine learning

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

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module covers the principles and methods used in artificial intelligence and machine learning. Learners will apply AI and ML methods to solve real-world problems.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Identify the capabilities of Artificial intelligence and the technology and components required with AI.
- Explore software and tools that can be used to process and analyse data and language.
- Understand how Machine learning works.
- Discuss the ethical implications of AI and ML.
- Solve problems using AI and ML methods.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of the principles, concepts and theories of AI and ML methods.	8.1.2, 8.5.4
2. Apply AI and ML tools to solve problems.	8.1.2, 8.2.3, 8.4.1
3. Evaluate the potential impact AI and ML has on society.	8.1.2, 8.1.3

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 2
MODE OF DELIVERY: Blended Learning	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	OTHER MODULE STAFF: John Glazebrook, Mark Williams
SUMMARY OF MODULE CONTENT:	

SUMMARY OF MODULE CONTENT:

Application of artificial intelligence, search algorithms. AI modelling, how it works, tools and methods used in AI, ethics, legislation and impact on society,

Types of machine learning, supervised, unsupervised and reinforcement. Datasets, Structured, Unstructured and Semi-Structured Data, Models, Algorithms, Model Training and Learning.

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*

Scheduled Activities	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Solving problems using AI and ML (ALO 1, 2, 3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Solving problems using AI and ML (ALO 1, 2, 3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD

MODULE CODE: TRUR2291	**MODULE TITLE:** Mobile App Development
CREDITS: 10 **FHEQ LEVEL:** 5	**HECoS CODE:** 100374 software engineering
PRE-REQUISITES: None **CO-REQUISITES:** None	**COMPENSATABLE:** Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module covers the specific considerations and processes involved in developing and deploying mobile applications. Learners will follow the software development lifecycle to design, develop, test and deploy a mobile application.

ELEMENTS OF ASSESSMENT – *see Definitions of Elements and Components of Assessment*

C1 (Coursework)	100%	**E1** (Examination)		**P1** (Practical)	
T1 (In-Class Test)		**O1** (online open book assessment)			

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing/Software Engineering

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Design and develop applications suitable for mobile devices using appropriate languages and tools.
- Deploy mobile applications for general use.
- Understand the architecture and features that must be considered when creating mobile applications.

ASSESSED LEARNING OUTCOMES: *(refer to Programme Specification for relevant Programme Intended Learning Outcomes)*

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

Assessed Module Learning Outcomes:	Programme Intended Learning Outcomes (PILOs) contributed to:
1. Demonstrate an understanding of mobile architectures and operating systems.	8.5.4
2. Design and develop a mobile application using appropriate languages, tools, frameworks and SDK's.	8.1.1,8.2.1, 8.2.3, 8.4.3, 8.5.5
3. Perform testing, maintenance and debugging of a mobile application.	8.2.1, 8.4.3

DATE OF APPROVAL: Mar-23	**FACULTY/OFFICE:** Academic Partnerships
DATE OF IMPLEMENTATION: Sep-24	**SCHOOL/PARTNER:** Truro and Penwith College
DATE(S) OF APPROVED CHANGE:	**SEMESTER:** 2
MODE OF DELIVERY: Blended Learning	

Notes:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2024-25	NATIONAL COST CENTRE: 121
MODULE LEADER: Naomi Johns-Dyer	OTHER MODULE STAFF: John Glazebrook, Mark Williams
SUMMARY OF MODULE CONTENT: Mobile device architectures, features and functions and operating system types. Choosing appropriate development languages, SDK's, frameworks, development environments and tools. Deploying mobile apps for public use, including laws and regulations. Testing and maintaining mobile applications.	

SUMMARY OF TEACHING AND LEARNING *(Refer to HESA KIS definitions)*		
Scheduled Activities	**Hours**	**Comments/Additional Information** (briefly explain activities, including formative assessment opportunities)
Lecture	15	Lectures include a combination of tutor led delivery, practical demonstrations, and independent/group practical activity.
Practical classes and workshops	7.5	
Guided Independent Study	77.5	
Total	**100**	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Developing Mobile Applications (ALO 1, 2, 3)	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	C1 – Developing Mobile Applications (ALO 1, 2, 3)	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Naomi Johns-Dyer Date: September 2023	**Approved by:** Naomi Johns-Dyer Date: September 2023