PROGRAMME QUALITY HANDBOOK 2023/24

FdSc Software Development

1. Welcome and Introduction to FdSc Software Development

Welcome to FdSc Software Development delivered at City College Plymouth.

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

This Programme Quality handbook contains important information including:
- The approved programme specification
- Module records

Note: The information in this handbook should be read in conjunction with the current edition of:
- Your Programme Institution & University Student Handbook which contains student support based information on issues such as finance and studying at HE

- Your Module, Teaching, Learning and Assessment Guide
  - available on your programme VLE
- Plymouth University's Student Handbook
  - available at:
    https://www.plymouth.ac.uk/your-university/governance/student-handbook

1. Programme Specification

1. **Award Title: FdSc Software Development**

   Intermediate Award: N/A

   UCAS code: G602

   JACS code: I100

2. **Awarding Institution:**   **University of Plymouth**

   Teaching institution(s):   **City College Plymouth**

3. **Accrediting body**(ies)   **N/A**

4.   Distinctive Features of the Programme and the Student Experience

A Graduate of the FdSc Software Development is someone who has studied the fundamental technical aspects of computing. They have chosen an academic pathway that enables them to develop further their understanding of how reliable and secure software is developed. They will have developed software using a variety of different paradigms, using a range of languages and will have developed confidence in being able to use any new languages that they are required to use in the future. They will understand how to use models in the software development process to model systems and organisations, and to solve complex software development problems. They will also be able to program user interfaces that are fit for their intended purpose, allowing users to interact with systems securely and safely. They will have taken opportunities to meet with local businesses in the digital industries, and applied their knowledge and skills to developing software solutions to computing problems.

Graduates of the FdSc Software Development are likely to go on to study on the BSc Computing at the University of Plymouth, but equally, they will have the confidence to seek a career, or to develop their own ideas into a business opportunity.

City College Plymouth has developed strong links with the local digital industry, the industry in which most Computing graduates will eventually be seeking employment. The College encourages active participation of its industry partners in both the development and delivery of its programmes, which enhances the experience and employability of its graduates. Industry selected problems are incorporated into the assessment which are then presented to the client/sponsor and the students are given the opportunity to reflect on work based learning skills gained from this experience.

Within Computing, the main method of delivery is to small groups of up to 20 students. As well as providing the core knowledge that students of computing require, there is a focus on project work and collaboration between students, not only within their group but across the range of Higher Education programmes delivered by the College, and with industry partners and clients. This provides a broader range of experiences for students and enhances their communication, collaboration and practical skills.

All of computing delivery is in the new STEM (Science, Technology, Engineering and Maths) Centre on Kings Road, providing a stimulating and comfortable learning environment where students can find all the hardware and software they need for their particular field of study, whilst sharing that environment with students studying in a range of science, creative and digital related subjects.

In addition to the new learning environment, Computing students have exclusive use of four dedicated computing labs, and a research space. Two of the labs offer their own dedicated networking environments to allow for experimentation in networking and security, whilst the software suites offer the student a range of open source and proprietary software to enhance the practical side of their education. Computing subscribes to Microsoft's Imagine programme, and is therefore able to provide students with fully licensed development software from Microsoft, as well as supporting the many open source options. This investment in resources continues on an annual basis ensuring that facilities are up to date and relevant.

All Computing programmes are delivered by a strong team with a depth and breadth to both academic and industry experience. Lecturers are here to teach, support and develop the knowledge and understanding of the subject that students have chosen

to study. The timetable will also be designed with students in mind and in most cases Computing students will benefit from a compact timetable that suits their needs, and that is consistent across the whole year, enabling them to plan the rest of their busy life around it.

The FdSc in Software Development will allow students to make full use of the opportunities offered by the College and its Partnership with industry and the University, whilst focussing on the specific area of Software Development. Students will study the underlying principles of Software Development whilst enhancing their practical skills using the range of current industry tools and techniques. Students will have the opportunity to develop real systems, for real clients which may be either internal or external to the College and will have the opportunity to meet with, and learn from, industry partners. During their first year, students will share units with the other Computing Programmes, and can therefore make a more informed choice about the particular field of computing in which they ultimately wish to specialise.

Dedicated students of the FdSc in Software Development will graduate as highly employable individuals with a broad experience of the computing subject, along with a specialist knowledge, and practical skills in Software Development.

5. Relevant QAA Subject Benchmark Group(s)

The FdSc in Software Development has been developed in consultation with various sources, both local and national, alongside our own significant experience. In particular, it considers the **QAA Subject Benchmark Statement for Computing**, the Department for Digital, Culture, Media and Sport's **UK Digital Strategy** policy paper, the **ACM/IEEE Computing Curricula Recommendations** and the **Foundation Degree Characteristics Statement**. In order to ensure delivery at the appropriate level, the Programme aligns learning outcomes with the **FHEQ** descriptors. The Programme also considers the needs of our local **industry partners**, in order to ensure that it supports the growth of the digital sector, and, thus, contributes to sustained economic growth in the region.

Like other types of Computing degree programmes, the FdSc in Software Development is "designed to equip graduates with knowledge, understanding and skills which will enable them to begin a professional career in some aspect of Computing" (QAA, 2016). However, the College does not anticipate the particular area of Computing in which students may wish to specialise, nor does it expect all of its graduates to seek employment in the Computing sector. In its UK Digital Strategy policy paper (DCMS, 2017) the Department for Digital, Culture, Media and Sport demonstrates that there are a significant number of computing related careers in non-digital Industries. In addition to developing students' "understanding of the established principles in their field of study" (QAA, 2015), the FdSc in Software Development embeds employability, minimum core, communication and critical thinking skills, to ensure that our Graduates have the best opportunity to gain employment in their chosen sector on graduation.

The College understands the desire of its graduates to progress to further study at level 6 and beyond. Therefore, as well as aligning its Learning Outcomes with the FHEQ descriptors at the appropriate level (QAA 2008), the Programme is cognisant of the higher level descriptors, ensuring graduates are adequately equipped to succeed should they continue with their education.

Whilst the College does not have a specific Industrial Advisory Board for Computing, it does work with a number of industry groups and partners in order to ensure that the curriculum is relevant and that its graduates are employable. Partners include Digital Plymouth, Software Cornwall, the Digital Policy Alliance and a variety of local and national organisations, who have either directly or indirectly contributed to the Programme.

6. Programme Structure for the FdSc Software Development (full-time) 2020/21

Stage 1 = 120 Level 4 Credits			
Semester 1			
Module Code	**Module Title**	**Credits**	**Core/ Optional**
CITY1101	Object Oriented Programming	20	Core
CITY1102	Computer Systems	20	Core
CITY1105	Web Development	20	Core
Semester 2			
Module Code	**Module Title**	**Credits**	**Core/ Optional**
CITY1104	Computer Networks	20	Core
CITY1103	Mathematics for Computing	20	Core
CITY1106	Database Development	20	Core

Stage 2 = 120 Level 5 Credits			
Semester 1			
Module Code	**Module Title**	**Credits**	**Core/Opt ional**
CITY2105	Computing Team Project *	20	Core (AY)
CITY2106	Web And Mobile Application Development	20	Core
CITY2108	Software Development	20	Core
CITY2109	Human Computer Interaction*	20	Core (AY)
Semester 2			
Module Code	**Module Title**	**Credits**	**Core/Opt ional**
CITY2118	Systems Analysis	20	Core
CITY2109	Human Computer Interaction*	20	Core (AY)
CITY2117	Data Structures and Algorithms	20	Core
CITY2105	Computing Team Project *	20	Core (AY)

* Stage 2 – CITY 2105 and CITY 2109 run across both Semesters at stage 2

7. Programme Structure for the FdSc Software Development (part-time) 2020/21

Year 1 = 80 Level 4 Credits			
Module Code (level)	**Module Title**	**No. of Credits**	**Core / Optional**
Semester 1			
CITY1101(4)	Object Oriented Programming	20	Core
CITY1102(4)	Computer Systems	20	Core
Semester 2			
CITY1104(4)	Computer Networks	20	Core
CITY1106(4)	Database Development	20	Core

Year 2 = 40 Level 4 Credits, 40 Level 5 Credits Total 80 Credits			
Module Code (level)	**Module Title**	**No. of Credits**	**Core / Optional**
Semester 1			
CITY1103(4)	Mathematics for Computing	20	Core
CITY1105(4)	Web Development	20	Core
Semester 2			
CITY2108(5)	Software Development	20	Core
CITY2118(5)	Systems Analysis	20	Core (AY)

Year 3 = 80 Level 5 Credits			
Module Code	**Module Title**	**No. of Credits**	**Core / Optional**
Semester 1			
CITY2105(5)	Computing Team Project*	20	Core (AY)
CITY2109(5)	Human Computer Interaction*	20	Core (AY)

CITY2106(5)	Web And Mobile Application Development	20	Core
Semester 2			
CITY2105(5)	Computing Team Project*	20	Core (AY)
CITY2109(5)	Human Computer Interaction*	20	Core (AY)
CITY2117(5)	Data Structures and Algorithms	20	Core

Note: CITY 2106 will run in Semester 2 for part-time students; CITY1105 will run in Semester 1 for Part-time students

8. Programme Aims

The FdSc in Software Development aims to:

- Provide learners with knowledge and critical understanding of the principles of Computing and how they have developed

- To equip graduates with knowledge, understanding and skills which will enable them to begin a professional career in Programming, Software Design, Software Development, or Systems Analysis using a range of programming languages and development environments

- Enable learners to continue in education or training in order to further develop existing skills or develop new competences in Software Development or any other discipline.

- Enable learners to collaborate on Computing and Software projects to develop their understanding of the nature of collaborative work in the context of Software Development, and the skills required for it to succeed

- Enable learners to make a contribution to the digital community in the region and beyond, both during and on completing the course

- Provide quality HE within an FE environment to support widening participation, and to provide learners with the best opportunity to achieve their potential

9.   Programme Intended Learning Outcomes

8.1.   Knowledge and understanding

On successful completion graduates should have developed:
1) A knowledge and critical understanding of the computing discipline as a whole and its application
2) A knowledge and critical understanding of the principles of programming, and software development in a range of paradigms
3) A knowledge and critical understanding of the role of modelling and systems analysis in software design and development

8.2.   Cognitive and intellectual skills
On successful completion graduates should have developed:
1) Their ability to learn independently and apply that learning to new problems
2) Their ability to analyse complex problems and evaluate solutions

8.3.   Key and transferable skills
On successful completion graduates should have developed the ability to:
1) Work collaboratively with others in order to solve problems
2) Communicate effectively with a variety of audiences
3) Apply critical thinking skills to their acquisition and application of knowledge

8.4.   Employment related skills
On successful completion graduates should have developed:
1) Their ability to complete tasks in a timely manner and to a required standard
2) Their ability to develop and deliver a product to a client
3) Their understanding of the role of computer systems in a variety of industry contexts

8.5.   Practical skills
On successful completion graduates should have developed:
1) Their ability to analyse systems and to create models of software system structure and behaviour
2) Their ability to design, build and test software systems in a variety of contexts using different paradigms
3) Their ability to select and apply a variety of tools for the development of a software solution

9. Admissions Criteria, including APCL, APEL and DAS arrangements

10. All applicants must have, or be working towards, a qualification equivalent to GCSE in Maths and in English at Grade a grade equivalent to C or above.

Entry Requirements for FdSc in Computer Systems Development	
A-level/AS-level	Normal minimum entry requirements are DD at A-level (48 UCAS Points) to include a numerate subject (e.g. Computing, Maths, Science).
BTEC National Diploma/QCF Extended Diploma	Candidates are interviewed before an offer is made. Grade PPP for Extended Diploma and MM for 90-Credit Diploma (48 UCAS Points).
Access to Higher Education at level 3	Candidates are interviewed before an offer is made. Pass in an Access to HE Diploma in Computing or Science with 45 credits at Level 3.
Other Qualifications	Non-traditional candidates with alternative equivalent qualifications will be considered. Candidates without the above qualifications, but who can demonstrate relevant industry experience are encouraged to apply.
Direct Entry to Stage 2 (Level 5)	Students may enter at level 5 with a relevant HNC made up of 120 level 4 module credits subject to the University of Plymouth APL regulations.

11. Progression criteria for Final and Intermediate Awards

Upon successful completion of the FdSc Software Development, students will be able to progress onto the following course at Level 6.
- BSc (Hons) Computing at University of Plymouth

12. Non Standard Regulations

None

13. Transitional Arrangements

Students on the current FdSc in Software Development will continue on the existing programme until their studies are complete.

2. Module Records

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

MODULE CODE: CITY1101	MODULE TITLE: Object Oriented Programming		
CREDITS: 20	FHEQ LEVEL: 4		JACS CODE: I322
PRE-REQUISITES: None	CO-REQUISITES: None		COMPENSATABLE: Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
The object oriented programming paradigm requires a programmer to *design* and *develop* code by considering what *objects* may exist in some system, how these are related to each other and how these may interact with each other. It is a proven method for developing reliable modular programs and encourages reuse which shortens development time. This module provides an introduction to the object-oriented programming paradigm.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions]* – *see Definitions of Elements and Components of Assessment*

E1 (Examination)		C1 (Coursework)	60 %	P1 (Practical)	40%
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
The module aims to provide learners with the fundamentals of object-oriented programming. It introduces concepts such as classes and objects, inheritance, aggregation, abstract classes, interfaces/pure virtual functions and polymorphism in order that the learner may apply these correctly to object oriented programs. It will introduce the benefits of using an object oriented approach to software development, such as shorter development cycles, adaptable code, and ability to interact with differing systems using common platforms.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes)
At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1 Demonstrate an understanding of the principles of object oriented programming	8.1.1, 8.2.2, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.5.1, 8.5.2
LO2 Apply good programming practice by producing an object oriented structured design as a programming solution	
LO3 Implement object oriented programming solution of moderate size and complexity	
LO4 Test, verify and document the resulting object oriented software	

DATE OF APPROVAL: 09/03/2018	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: September 2018	SCHOOL/PARTNER: City College Plymouth
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	SEMESTER: Semester 1
Notes:	

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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

ACADEMIC YEAR: 2020/21	NATIONAL COST CENTRE: 121
MODULE LEADER: Dr Andrew Watson	OTHER MODULE STAFF:

Summary of Module Content
- Classes, Abstract Classes, Interfaces/Pure Virtual Functions
- Constructors/destructors
- Encapsulation and public, private and protected scope
- Inheritance
- Association
- Composition
- Aggregation
- Polymorphism, Method Overloading, Method Overriding
- Libraries
- Design principles
  - coherence and (de-)coupling between the classes
  - identification of dependencies, aggregation, inheritances, data and file structures
  - class diagrams, sequence diagrams
- IDE - source code editor, compiler, interpreter, build automation tools, debugger
- Error and exception handling
- Testing, Verifying,Validating, Documentation

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on aspects and theory of OOP	LO1, LO2 100%
Practical	Demonstration of Implementation and testing of OOP application	LO3, LO4 100%

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting

Coursework	Report on aspects and theory of OOP (New/different)	LO1, LO2 100%
Practical	Demonstration of Implementation and testing of OOP application (New/different)	LO3, LO4 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr A Watson Date: 12/09/2023	**Approved by**: Date:

UNIVERSITY OF PLYMOUTH MODULE RECORD

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

MODULE CODE: CITY1102	MODULE TITLE: Computer Systems		
CREDITS: 20	FHEQ LEVEL:4		JACS CODE: I230
PRE-REQUISITES: None	CO-REQUISITES: None		COMPENSATABLE: Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
This module will help learners to understand the fundamental components that are used to form a computer. It will provide an overview of different types of computer and identify various operating systems that are used.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see* [Definitions of Elements and Components of Assessment](#)

E1 (Examination)	30%	**C1** (Coursework)	70%	**P1** (Practical)	
E2 (Clinical Examination)		**A1** (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
The module aims to provide learners with the fundamentals of the key components of a personal computer, including understanding how computers represent numbering systems and an introduction to low level languages. The module will also identify the various types of computer and different operating systems as well as investigating technological advances leading to the modern computer.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes.
At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1. Demonstrate knowledge of the main components of a personal computer. LO2. Demonstrate an understanding of representing numbering systems used by computers LO3. Demonstrate knowledge of different types of computers and operating systems used today. LO4. Demonstrate the analysis of emerging technologies of computing which have led to the modern personal computer.	8.1.1, 8.1.2, 8.2.2, 8.3.3, 8.4.1, 8.5.1

DATE OF APPROVAL: 09/03/2018	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: September 2018	SCHOOL/PARTNER: City College Plymouth
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	SEMESTER: Semester 1
Notes:	

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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

ACADEMIC YEAR: 2020/21	NATIONAL COST CENTRE: 121
MODULE LEADER: Dr Andrew Watson	OTHER MODULE STAFF:
Summary of Module Content This module will initially cover the history of computers and the major components that are used within them. Cover various types of computers and operating systems available to them. Include a practical element where students will use and program various computer platforms for different applications.	

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Written exam	Exam covering representation of number systems	LO2 100%
Coursework	Report covering principles and components.	LO1, LO3, LO4 100%

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting
Written exam (as coursework)	Exam covering representation of number systems (New/different)	LO2 100%
Coursework	Report covering principles and components. (New/different)	LO1, LO3, LO4 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Andrew Watson Date: 12/09/2023	**Approved by**: Date:

UNIVERSITY OF PLYMOUTH MODULE RECORD

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

MODULE CODE: CITY1103		MODULE TITLE:	Mathematics for Computing	
CREDITS: 20		FHEQ LEVEL: 4		JACS CODE: G170
PRE-REQUISITES: None		CO-REQUISITES: None		COMPENSATABLE: Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module will develop the student's mathematical ability and provide a foundation for computer based algebra, transformations, numerical concepts and relational algebra. Computing packages and calculators will be used throughout the programme.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see* *Definitions of Elements and Components of Assessment*

E1 (Examination)	50%	C1 (Coursework)	50%	P1 (Practical)	
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

This module aims to provide students with an understanding of the mathematical principles in particular computer based algebra, transformations, numerical concepts and relational algebra and implementation of logic and algorithms, giving students the opportunity to develop a computer programs.

The mathematics unit brings together theory form across the range of other units including networks, software development and databases directly support applications such as sub-netting, set theory, and relational algebra. Students will also have the opportunity to apply their mathematical knowledge to the development of computer programs, thus seeing the relationship between mathematics and programming algorithms.

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

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1. Solve a range of mathematical problems.	8.1.1, 8.2.2, 8.3.3, 8.4.1, 8.4.3
LO2. Model a range of mathematical problems within a computing context	
LO3. Analyse the applications of mathematical skills within a range of theoretical frameworks	

LO4. Apply probability and statistics to a range of problems.	

DATE OF APPROVAL: 09/03/2018	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: September 2018	**SCHOOL/PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Semester 1**
Notes:	

Additional Guidance for Learning Outcomes:

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

- Framework for Higher Education Qualifications
http://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements
http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code
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SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: Tomasz Bergier	OTHER MODULE STAFF:

Summary of Module Content

Solve a range of mathematical problems
- Matrix
- Matrix and Network Routing Theories
- Path Theories and Analysis
- Cascade & Levelling Theories
- Sets & Venn Diagrams
- Logics and Boolean Algebra
- Number Systems

Model a range of mathematical problems within a computing context
- Matrix and Network Routing Theories
- Path Theories and Analysis
- Cascade & Levelling Theories
- Sets & Venn Diagrams
- Logics and Boolean Algebra
- Number Systems

Analyse the applications of mathematical skills within a range of theoretical frameworks
- Path Theories and Analysis
- Cascade & Levelling Theories
- Logics and Boolean Algebra
- Number Systems
- Complex Numbers and Fractals and Mandelbrot Set
- Solving Equations by Determinants & Gaussian Elimination

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	200	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Exam	Modelling and solving mathematical problems	LO1, LO2 100%
Practical	Analysing practical applications and design and report on probability and statistical problems, for client and server side scripting	LO3, LO4 100%

REFERRAL ASSESSMENT(Same)

Element Category	Component Name	Component Weighting
Exam (as coursework)	Modelling and solving mathematical problems (New/different)	LO1, LO2 100%
Practical	Analysing practical applications and design and report on probability and statistical problems, for client and server side scripting (New/different)	LO3, LO4 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr A Watson Date: 12/09/2023	**Approved by**: Date:

MODULE CODE: CITY1104	MODULE TITLE: Computer Networks		
CREDITS: 20	FHEQ LEVEL: 4		JACS CODE: I120
PRE-REQUISITES: None	CO-REQUISITES: None		COMPENSATABLE: Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
Networking is at the heart of modern life, providing the infrastructure for all types of communication. This module introduces the students to the fundamental technology of networks and the underlying concepts and protocols. The module has a balanced mix of theory and practice, with the theoretical concepts discussed in the lectures matched by scenarios to design, implement, configure and troubleshoot in the lab sessions.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see* <u>Definitions of Elements and Components of Assessment</u>

E1 (Examination)		C1 (Coursework)	50%	P1 (Practical)	50%
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
This module aims to provide students with an introduction to the computer networks and design, implementation and troubleshooting giving students the opportunity to develop a computer networks for a small to medium businesses.

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

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1. Understand computer network components and types of network systems and protocols.	8.1.1, 8.1.2, 8.1.3, 8.2.2, 8.3.2, 8.3.3, 8.4.1, 8.5.2, 8.5.3
LO2. Design a computer network for a given business requirement.	
LO3. Implement a computer network from a design using a variety of software and hardware.	
LO4. Troubleshoot a computer networks.	

DATE OF APPROVAL: 09/03/2018	FACULTY/OFFICE: Academic Partnerships

DATE OF IMPLEMENTATION: September 2018	SCHOOL/PARTNER: City College Plymouth
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	SEMESTER: Semester 2
Notes:	

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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

ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: Grant Sewell	OTHER MODULE STAFF:

Summary of Module Content

Computer network components:

- Network devices - servers, server services, workstations, firewalls, printers, etc.
- Interconnection devices - routers, bridges, switches, access points, etc.
- Cabling - leased vs. dedicated line, Category 5 and 6, fibre optic, etc.
- Operating Systems - UNIX Like and MS Windows
- Software - firewall, Iptables, ACL, etc.

Types of network systems and protocols.

- Types of network - LAN, WAN, PAN, frame relay, MPLS, ATM
- Network topologies - star, bus, ring, mesh, tree.
- Network access methods - CSMA, Token passing.
- Network models - OSI and TCP/IP.
- Network protocols - Application protocols, intro to routing protocols, TCP, UDP, IP, 802.2, 802.3, FDDI, 802.5, 802.11, range and speed of wireless technologies.

Design a computer network:

- Understand a client needs.
- Understand network and interconnection devices specification.
- Producing a network topology/diagram.
- Designing IP addresses - Classless Inter-Domain Routing (CIDR)
- Network security - firewall, iptables, ACLs, etc.
- Backup system.

Implement a computer network:

- Build a computer network from a design.
- Cabling.
- Set up Cisco routers and switches.
- Set up server services and backup system.
- Build a firewall.

Troubleshoot a computer networks:

- Aspects of troubleshooting - the process, identifying the symptoms, isolate the cause, take corrective action and evaluate the solution(s)
- The bottom-up approach.
- The up-bottom approach.
- The divide-and-conquer approach.
- The follow-the-paths approach.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	200	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	**Component Name**	**Component Weighting**
Coursework	Report on principles and design	LO1, LO2, 100%
Practical Test	Demonstration of Practical Work	LO3, LO4 100%

REFERRAL ASSESSMENT (Same)

Element Category	**Component Name**	**Component Weighting**
Coursework	Report on principles and design (New/different)	LO1, LO2, 100%
Coursework	Demonstration of Practical Work (New/different)	LO3, LO4 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr A.H. Watson Date: 12/09/2023	**Approved by**: Date:

UNIVERSITY OF PLYMOUTH MODULE RECORD

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

MODULE CODE: CITY1105		MODULE TITLE: Web Development			
CREDITS: 20		FHEQ LEVEL: 4		JACS CODE: I160	
PRE-REQUISITES: None		CO-REQUISITES: None		COMPENSATABLE: Yes	
SHORT MODULE DESCRIPTOR: *(max 425 characters)* This module gives the student an introduction to developing web applications. It establishes the fundamental components required to develop software for the web. It provides an introductory understanding and use of programming and scripting languages needed. Security and legal aspects of web applications are introduced.					
ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*					
E1 (Examination)		**C1** (Coursework)	60%	**P1** (Practical)	40%
E2 (Clinical Examination)		**A1** (Generic assessment)			
T1 (Test)					
SUBJECT ASSESSMENT PANEL to which module should be linked: Computing					
Professional body minimum pass mark requirement: N/A					
MODULE AIMS: The aims of this module are to develop an understanding of the distinct and diverse components required for web development; the programming languages and scripting techniques necessary for development; and some legal and security issues that must be considered. It also introduces user centred web development design processes, theories, methods and techniques.					
ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes) At the end of the module the learner will be expected to be able to:					

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1 Apply a variety of programming and scripting languages in an appropriate and effective manner to produce a simple web based application	8.1.1, 8.2.2, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.5.1, 8.5.2
LO2 Demonstrate an understanding of the necessary diverse and distinct component architecture of web based development	

LO3 Design, implement, test and evaluate a simple web-based application	
LO4 be able to follow a user centred website design approach and understand how application content is represented and communicated across the web and how this affects the user experience	

DATE OF APPROVAL: 09/03/2018	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: September 2018	**SCHOOL/PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Semester 2**
Notes:	

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2020/21	NATIONAL COST CENTRE: 121
MODULE LEADER: Dr Hind Al Obaidi	OTHER MODULE STAFF:

Summary of Module Content
- Web components and data
- Designing web applications for users
- Scripting, client-side languages and Standards such as
  - HTML5/Bootstrap
  - Javascript
  - DOM/XML
  - AngularJS
- IDE's for web applications
  - Development, Templates, Debugging
- Testing web apps
- Security and Legal Issues

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	200	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Requirements and Design Report	LO2, LO3, LO4 100%
Practical	Demonstration of Development and Implementation	LO1, 100%

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting
Coursework	Requirements and Design Report (New/different)	LO2, LO3, LO4 100%
Practical	Demonstration of Development and Implementation (New/different)	LO1, 100%

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

Updated by: Dr Andrew Watson	**Approved by**:
Date: 12/09/2023	Date:

UNIVERSITY OF PLYMOUTH MODULE RECORD

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

MODULE CODE: CITY1106		MODULE TITLE: Database Development			
CREDITS: 20		FHEQ LEVEL: 4		JACS CODE: I240	
PRE-REQUISITES: None		CO-REQUISITES: None		COMPENSATABLE: Yes	

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
Databases underlie many modern business applications, and most software developer will find themselves involved with the development of maintenance of them at some point in their career. It is important to understand the principles of relational database design to underpin and developments in other database models, and this unit will focus on the relational model, but provide some pointers to alternatives.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*

E1 (Examination)		C1 (Coursework)	70%	P1 (Practical)	30%
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
This module aims to provide students with an understanding of the principles of relational database design and implementation. It will give them the opportunity to develop a database using a range of available tools.

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

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1. Design a relational database for a given business requirement	8.1.1, 8.1.2, 8.2.2, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.5.1, 8.5.2
LO2. Implement a database from a design using a variety of software tools	
LO3. Evaluate a database against the requirements	

DATE OF APPROVAL: 09/03/2018	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: September 2018	SCHOOL/PARTNER: City College Plymouth
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	SEMESTER: Semester 2

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Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: Dr Andrew Watson	OTHER MODULE STAFF:

Summary of Module Content

Relational databases and their application
- Relational Databases
- Keys/Tables/Relationships
- Advantages/Drawbacks
- Other database models and the relationship with the relational model

Fundamentals of relational database design
- Modelling Concepts
- Logical Design
- Entity Relationship Diagrams
- Data Anomalies
- Normalisation
- Physical Design
- Constraints
- Queries
- Validation

Implementation
- RDBMS features
- SQL
- Security features
- Database applications

Forms and Reports
- Understanding the HCI requirements for creating user friendly information systems
- Standard Reporting vs Ad Hoc Reports

Testing and Evaluation
- Testing tables/and relationships
- Testing queries
- Testing I/O forms

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	200	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Design and Evaluation	LO1, LO3 100%
Practical	Demonstration of Database solution	LO2 100%

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting
Coursework	Design and Evaluation (New/different)	LO1, LO3 100%
Practical	Demonstration of Database solution (New/different)	LO2 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr Andrew Watson Date: 12/09/2023	**Approved by**: Date:

MODULE CODE: CITY2105		MODULE TITLE: Computing Team Project			
CREDITS: 20		FHEQ LEVEL:5		JACS CODE: I220	
PRE-REQUISITES: None		CO-REQUISITES: None		COMPENSATABLE: Yes	

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This practical take on systems engineering introduces this as a means of facilitating and assuring the development of a complex computer related technical product. Focusing predominantly on introducing tools and techniques that can be applied at different stages of the product development cycle. It will cover relevant system analysis processes that support project management and will focus on the Agile development model. Students will be given a group project specified by an industrial collaborator which will have well defined targets and timescales for completion.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions]* – see *Definitions of Elements and Components of Assessment*

E1 (Examination)		C1 (Coursework)	70%	P1 (Practical)	30%
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

1. To introduce students to specifying and solving computing problems a s part of a team
2. To give students the opportunity to implement a project using an Agile approach to project management
3. To develop students ability to experiment with project management tools and techniques
4. To allow students to learn how to demonstrate their ability to work as part of a team to find a solution to a problem.
5. To allow students to reflect and evaluate the skills required within a work based project.

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

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to

LO1 Select an appropriate project, preparing an appropriately detailed project proposal LO2 Demonstrate the application of Agile project management to a group project LO3 Demonstrate the ability to work in a team project LO4 Evaluate and present the findings of a project to the client/sponsor	8.1.1, 8.2.1, 8.2.2, 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.5.1, 8.5.2

DATE OF APPROVAL: 09/03/2018	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: September 2018	**SCHOOL/PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: All Year**
Notes: The assessment is a group project with a minimum of 3 students in each group. Each group will receive a group mark which contributes 50% of the student's marks and 50% of the mark based on their individual contribution to the project. The group will present their final projects to their peers, client/Sponsor and assessor. The students will be taught project management principles and systems lifecycle models but will be required to use the agile development model. Each student must chair at least one group meeting and also minute at least one meeting. Students will be required to liaise with employers/clients to produce solutions to real world problems.	

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: Dr Andrew Watson	OTHER MODULE STAFF:
Summary of Module Content This module will initially cover the theory behind project management and different systems analysis lifecycles. The students will then undertake a group computing software project documenting all stages of development. Students will use the Agile model for software development.	

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions/meetings with industry project leader
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from the module leader. This will also be time allocated to the project implementation
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Project Proposal, Documentation and Reflection on skills developed for WBL	LO1, LO2, LO3 100%
Practical	Presentation of findings and evaluation to peers, assessor and client/sponsor	LO4 100%

REFERRAL ASSESSMENT (Different)

Element Category	Component Name	Component Weighting
Coursework	Project proposal and documentation, slideshow with notes and supporting material to present findings and evaluation.	LO1 LO2 LO3 LO4 100%

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

UNIVERSITY OF PLYMOUTH MODULE RECORD

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

MODULE CODE: CITY2106	MODULE TITLE:		Web And Mobile Application Development		
CREDITS: 20	FHEQ LEVEL: 5			JACS CODE: I160	
PRE-REQUISITES: None	CO-REQUISITES: None			COMPENSATABLE: Yes	

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module gives the student both conceptual and practical experience of developing web and mobile applications. It provides the student with fundamental understanding regarding: web architecture and its associated components; how to design web applications; and how to apply the appropriate programming paradigms and languages to build applications. It also provides the student with fundamental understanding regarding: application architecture and its associated components; how to design for mobile devices; and how to apply the appropriate programming paradigms, frameworks and languages to build applications. Security ethical and legal aspects of web and mobile applications are introduced.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see [Definitions of Elements and Components of Assessment](#)*

E1 (Examination)		C1 (Coursework)	50 %	P1 (Practical)	50%
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

The aims of this module are to develop an understanding of the architecture and components required for web and mobile applications; the programming paradigms, languages and advanced scripting techniques necessary for the development of such applications; and the issues involved in representing, communicating and interacting with distributed, live and multi-user web and mobile content. The module also looks at on-board hardware that is unique to mobile devices.

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

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1 Understand the principles of object oriented and event-based languages and scripting to the development of web and mobile applications.	8.1.1, 8.1.2, 8.2.1, 8.2.2, 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.5.1, 8.5.2, 8.5.3

LO2 Demonstrate an understanding of the underlying web architecture; communications; and content; User Interface Design	
LO3 Demonstrate an understanding of the underlying mobile architecture and how application content can harness this to deliver a uniquely mobile user experience.	
LO4 Design, implement and evaluate/test dynamic web-based and mobile applications with consideration to their user interfaces	

DATE OF APPROVAL: 09/03/2018	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: September 2018	**SCHOOL/PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Semester 1**

Notes:

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: T Bergier	OTHER MODULE STAFF:

Summary of Module Content
- Client/Server architecture, comms. and data
- Programming paradigms and their relation to web apps:
  - Object oriented
  - Event-driven
- Synchronous vs Asynchronous
- Server-side languages such as
  - NodeJS
  - PHP
  - MySQL
- Scripting, client-side languages and Standards such as
  - HTML5/Bootstrap
  - Javascript
  - DOM/XML
- Mobile scripting languages
- Design of Mobile and Web Application User Interfaces
  - Perception - Gestalt, Human Vision
  - Accessibility
- IDE's for web and mobile applications
  - Development, Templates, Debugging
- Combination of hardware architecture and components on mobile devices
- Programming paradigms and their relation to mobile applications:
  - Object oriented
  - Event-driven
  - Model View Controller architecture
- Mobile app development languages and SDK's
- Testing event driven web and mobile apps
- Security and Legal Issues

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on Web and Mobile Architectures	LO1, LO2, LO3 100%
Practical	Development and Implementation	LO4 100%

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting
Coursework	Report on Web and Mobile Architectures (New/different)	LO2, LO2, LO3 100%
Practical	Development and Implementation (New/different)	LO4 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr Andrew Watson Date: 12/09/2023	**Approved by**: Date:

UNIVERSITY OF PLYMOUTH MODULE RECORD

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

MODULE CODE: CITY2108	MODULE TITLE: Software Development				
CREDITS: 20	FHEQ LEVEL: 5			JACS CODE: I300	
PRE-REQUISITES: None	CO-REQUISITES: None			COMPENSATABLE: Yes	
SHORT MODULE DESCRIPTOR: *(max 425 characters)* This module explores the principles and techniques of software development. The learners will acquire an understanding of analysis, design, software construction and testing both in independent and collaborative development. Various design patterns and software architectures and frameworks are explored and professional skills such as UML and Agile are developed.					
ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions]* – see *Definitions of Elements and Components of Assessment*					
E1 (Examination)		**C1** (Coursework)	60 %	**P1** (Practical**)**	40%
E2 (Clinical Examination)		**A1** (Generic assessment)			
T1 (Test)					
SUBJECT ASSESSMENT PANEL to which module should be linked: Computing					
Professional body minimum pass mark requirement: N/A					
MODULE AIMS: The aims of this module are to develop an understanding of the analysis, design, software construction and testing processes and consolidate the learners' initial experiences of programming and the resulting development of software. The focus is the development of skills such as design patterns and UML and introducing development methodologies such as Agile and the Unified Development Process. In addition it aims to extend their understanding of more complex ideas in software development such as collaborative design and integration.					
ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes) At the end of the module the learner will be expected to be able to:					

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1 Understand the differences, advantages and disadvantages of software development methodologies	8.1.2, 8.1.3, 8.2.1, 8.2.2, 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.3, 8.5.1, 8.5.2, 8.5.3
LO2 Demonstrate the ability to capture and validate software requirements,	
LO3 applying relevant design diagrams to validated software requirements	
LO4 Implement and test architecture and designs in software.	

DATE OF APPROVAL: 09/03/2018	**FACULTY/OFFICE: Academic Partnerships**

DATE OF IMPLEMENTATION: September 2018	SCHOOL/PARTNER: City College Plymouth
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	SEMESTER: Semester 1
Notes:	

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: Tomasz Bergier	OTHER MODULE STAFF:

Summary of Module Content
- Modeling Language and the Unified Development Process
  - Domain Models
  - Use Cases
  - Design Patterns
  - Class Diagrams
  - Interaction Diagrams
  - Sequence Diagrams
  - State Diagrams
  - Package, deployment and component diagrams
- Software Development Methodologies
  - Values and principles
  - Iteration, increments and evolution
  - Communication and quality
  - Adaptive, predictive, iterative vs waterfall, code vs documentation
  - Development practices
  - Pitfalls
- Implementation in Object Oriented Programming Language
- Collaborative design and Integration testing
- Creating test cases, analysis of test cases

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on methodologies, requirements and design documentation	LO1, LO2, LO3 100%
Practical	Demonstration of Practical work	LO4 100%

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting
Coursework	Report on methodologies, requirements and design documentation (New/different)	LO1, LO2, LO3 100%
Practical	Demonstration of Practical work (New/different)	LO4 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr A Watson Date: 12/09/2023	**Approved by**: Date:

MODULE CODE: CITY2109	MODULE TITLE: Human Computer Interaction			
CREDITS: 20	FHEQ LEVEL: 5		JACS CODE: I140	
PRE-REQUISITES: None	CO-REQUISITES: None		COMPENSATABLE: Yes	

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
Advances in HCI significantly impact our daily lives and interaction with computers is frequent and necessary. Hence it is essential this interaction is natural, efficient and effective. This module aims to give learners: theories, practices and tools required to design and construct interfaces that meet these needs; a critical appreciation of interfaces currently available; and the experience of prototype development.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions]* – see *Definitions of Elements and Components of Assessment*

E1 (Examination)		C1 (Coursework)	60%	P1 (Practical)	40%
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
The aims of this module are to enable the student to thoroughly investigate and research HCI related developments and applications, including issues and challenges related to some chosen HCI examples. It focuses on showing students how to design and develop appropriate and useful HCI prototypes. In addition it aims for students to be able to critically evaluate HCI prototypes.

ASSESSED LEARNING OUTCOMES: (additional guidance below; please refer to the Programme Specification for relevant award/ programme Learning Outcomes)
At the end of the module the learner will be expected to be able to:

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1 Understand the way in which humans receive and process information through senses	8.1.1, 8.1.2, 8.1.3, 8.2.1, 8.2.2, 8.3.1, 8.3.2, 8.3.3, 8.4.1, 8.4.2, 8.4.3, 8.5.1, 8.5.2, 8.5.3
LO2 Understand the history and concepts of HCI and issues that can impact HCI design in computer applications	
LO3 Create and evaluate HCI environments for given scenarios	

DATE OF APPROVAL: 09/03/2018	FACULTY/OFFICE: Academic Partnerships

DATE OF IMPLEMENTATION: September 2018	SCHOOL/PARTNER: City College Plymouth
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	SEMESTER: All Year

Notes:

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2020/21	NATIONAL COST CENTRE: 121
MODULE LEADER: T Bergier	OTHER MODULE STAFF:

Summary of Module Content
- Human Memory - Sensory, Short Term, Long Term
- Perception - Gestalt, Human Vision
- Mental Models - Structural, Functional, Ethnographic Interviews
- Cognitive Models - Human Information Processor, GOMS, Fitts Law
- Attention Control Theory
- Ethics - Professional, Cultural, HCI vs Medical, Consent
- Affective Computing
- Emotion Recognition
- Posture/Gait/Gestures/Speech/Recognition
- Virtual Reality
- Augmented Reality
- Brain Computer Interfaces - EEG Interfaces, Non Invasive, Invasive
- Predictive/Adaptive User Interfaces
- History, Adverse Conditions, Ergonomics, Standards
- Accessibility
- Evaluation - Pluralistic Walkthroughs, Cognitive Walkthroughs, Formative, Summative, Survey design, Field Tests, Nielsen's Heuristics, User Testing
- Shneiderman's 8 Golden Rules, Flat Design and Gestalt
- Metaphors, Icons
- Designing useful "Help", Context Sensitive Help

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	200	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Report on HCI principles and chosen development	LO1, LO2 100%
Practical	Demonstration of practical work	LO3 100%

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting
Coursework	Report on HCI principles and chosen development (New/different)	LO1, LO2 100%
Practical	Demonstration of practical work (New/different)	LO3 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr Andrew Watson Date: 12/09/2023	**Approved by**: Date:

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

MODULE CODE: CITY2117		MODULE TITLE: Data Structures And Algorithms			
CREDITS: 20		FHEQ LEVEL:5		JACS CODE: I260	
PRE-REQUISITES: None		CO-REQUISITES: None		COMPENSATABLE: Yes	

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
This module will provide the learner with experience in the use of algorithms and data structures which underpin much of today's computing. The unit will develop formal concepts of data structures and algorithms and the relationship between them. Topics covered will include stacks, queues, linked lists, binary trees and sorting and searching algorithms.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*

E1 (Examination)	50%	C1 (Coursework)	50%	P1 (Practical)	
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
This unit will provide the learner with experience in the use of algorithms and data structures which underpin much of today's computing. The unit will develop formal concepts of data structures and algorithms and the relationship between them. Topics include stacks, queues, linked lists, binary trees and sorting algorithms.

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

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1. Synthesise and implement stacks, linked lists, sorting and queues. LO2. Compile and use abstract data types within programs. LO3. Evaluate algorithms and justify the selection of the most appropriate data structure/algorithm for a given problem	8.2.1,8.2.2,8.4.1,8.5.1,8.5.2,8.5.3

DATE OF APPROVAL: 09/03/2018	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: September 2019	SCHOOL/PARTNER: City College Plymouth

DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	SEMESTER: Semester 2
Notes:	

Additional Guidance for Learning Outcomes:

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

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

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: Dr Andrew Watson	OTHER MODULE STAFF:
Summary of Module Content	

Summary of Module Content
This unit will provide the learner with experience in the use of algorithms and data structures which underpin much of today's computing.
The unit will develop formal concepts of data structures and algorithms and the relationship between them.
Topics include stacks, queues, linked lists, binary trees and sorting algorithms.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Exam	Exam covering evaluation and justification of algorithms	LO3 100%
Coursework	Assignment covering application and implementation of algorithms	LO1,LO2 100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Exam	Exam covering evaluation and justification of algorithms	LO1, LO2 100%
Coursework	Assignment covering application and implementation of algorithms	LO3 100%

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

Updated by: Andrew Watson	**Approved by**:
Date: 12/09/2023	Date:

UNIVERSITY OF PLYMOUTH MODULE RECORD

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

MODULE CODE: CITY2118	MODULE TITLE: Systems Analysis	
CREDITS: 20	FHEQ LEVEL: 5	JACS CODE: I230
PRE-REQUISITES: None	CO-REQUISITES: None	COMPENSATABLE: Yes

SHORT MODULE DESCRIPTOR: *(max 425 characters)*
Software developers are often good at understanding conceptual models of the software they write and can document this in both code and as UML diagrams. This module looks at the modelling of an organisation using UML and related notations, and the transition from Business Model into Software Model.

ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment*

E1 (Examination)	50%	C1 (Coursework)	50%	P1 (Practical)	
E2 (Clinical Examination)		A1 (Generic assessment)			
T1 (Test)					

SUBJECT ASSESSMENT PANEL to which module should be linked: Computing

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
This module aims to provide students with an understanding of the role and practicalities of systems analysis and the modelling of business systems. It also aims to help students understand the relationship between business models and software using standard notations and modelling languages.

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

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1. Understanding the process of analysing of business requirements	8.1.1, 8.1.2, 8.2.1, 8.2.2, 8.3.3, 8.4.1, 8.4.3, 8.5.2
LO2. Analyse and accurately apply models to the analysis of a business requirement	
LO3. Evaluate modelling notations and their application to business problems	

DATE OF APPROVAL: 09/03/2018	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: September 2018	**SCHOOL/PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	**SEMESTER: Semester 2**
Notes:	

Additional Guidance for Learning Outcomes:

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

- Framework for Higher Education Qualifications
  http://www.qaa.ac.uk/publications/information-and-guidance/publication/?PubID=2718#.VW2INtJVikp
- Subject benchmark statements
  http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx
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ACADEMIC YEAR: 2023/24	NATIONAL COST CENTRE: 121
MODULE LEADER: Dr Andrew Watson	OTHER MODULE STAFF:

Summary of Module Content

Modelling notations
- UML; BPMN
- Object Constraint Language

Diagrams
- Use Cases
- Class diagram
- Workflow Diagrams
- Interaction Diagrams
- State Diagrams
- Activity Diagrams

UML tools
- Drawing vs Modelling
- Visual Paradigm
- Rational Architect
- MS Visio
- Cloud based tools

Transition to Software
- Implementation of Class diagrams
- O/R Mapping

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*		
Scheduled Activities	**Hours**	**Comments/Additional Information (briefly explain activities, including formative assessment opportunities)**
Lectures	15	Combined lecture/lab sessions
Directed Study	45	Combined lecture/lab sessions
Student Self Study	140	Google classroom is the starting point for guidance in directed study with direction from module leader.
Total	**200**	**(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc.)**

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Written exam	End of module Examination covering modelling notations	LO2 100%

| Coursework | Report on an application of business modelling and the transition to software models. Includes evaluation of tools and techniques. | LO1, LO3 100% |

REFERRAL ASSESSMENT (Same)

Element Category	Component Name	Component Weighting
Written exam (As coursework)	Modelling notations (New/different)	LO2 100%
Coursework	Report on an application of business modelling and the transition to software models. Includes evaluation of tools and techniques. (New/different)	LO1, LO3 100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Dr Andrew Watson Date: 12/09/2023	**Approved by**: Date: