

## Programme Specification

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[UG Programme Directory](#)

[PG Programme Directory](#)

Section 1 – regulatory details		
1.1	Awarding body	Wrexham University
1.2	Teaching institution	Hong Kong Institute of Technology
1.3	Final award and programme title (Welsh and English)	BSc (Anrh) Cyfrifiadureg BSc (Hons) Computer Science
1.4	Exit awards and titles	BSc (Ord) Computer Science Diploma of Higher Education in Computer Science Certificate of Higher Education in Computer Science
1.5	Credit requirements	360 credits - BSc (Hons) Computer Science, 120 of which are at level 6 300 credits – BSc (Ord) Computer Science, 60 of which are at Level 6 240 credits – Dip HE, 120 of which are at Level 5 or above 120 credits – Cert HE, 120 credits at level 4 or above
1.6	Intake points	2 – September and February
1.7	Mode of study	Full & part time If other, please specify
1.8	Length of delivery	Full Time – 3 years Part-time – 5 years (2 modules per semester)
1.9	Location of delivery	Hong Kong Institute of Technology
1.10	Language of delivery	<i>English</i> If other, please specify
1.11	Faculty	Faculty of Arts, Computing and Engineering (FACE)
1.12	Subject area	Computing
1.13	HECoS Code	100366
1.14	Suitable for applicants requiring a Student Visa?	N/A
1.15	Is DBS check required on entry?	No
1.16	Professional, Statutory or Regulatory Body (PSRB) accreditation	N/A
1.17	Welsh Medium Provision	The programmes will be delivered through the medium of English. Students are entitled to submit assessments in the medium of Welsh.
1.18	External reference points	QAA Subject Benchmark Statement: Computing March 2022 <a href="https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/computing">https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements/computing</a>  The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies <a href="https://www.qaa.ac.uk/quality-code/qualifications-and-credit-frameworks">https://www.qaa.ac.uk/quality-code/qualifications-and-credit-frameworks</a>

Section 1 – regulatory details		
1.19	Derogation to Academic Regulations	N/A
1.20	Foundation Year route	N/A
1.21	Placement / Work based learning	N/A – no placement
1.22	Length and level of the placement	N/A
1.23	Collaborative arrangement	Franchise
1.24	Criteria for admission to the programme	<p><b>Minimum Admission Requirements</b></p> <p><b>Year 1 Entry</b></p> <ul style="list-style-type: none"> <li>• HKDSE 15 points in five subjects (Level 1 = 1 point and Level 5** = 7 points) with at minimum Level 3 in English Language, at minimum Level 2 in Mathematics, and no subjects are at Level 1</li> <li>• Equivalent qualifications (such as 112 UCAS tariff points at GCE A - level including IT, computing, maths or physics)</li> </ul> <p>Remark: The home institution will assess the equivalent qualification on case by case basis.</p> <p><b>English language proficiency requirement</b></p> <ul style="list-style-type: none"> <li>• HKDSE Level 3 or above in English Language; or</li> <li>• Previous qualification taught in English; or</li> <li>• Having met WU's English language requirement for bachelor's degree programmes which includes IELTS (Academic) at 6.0 with no individual skill score below 5.5</li> </ul> <p><b>Minimum Admission Requirements</b></p> <p><b>Year 2 and 3 Entry</b></p> <ul style="list-style-type: none"> <li>• Recognised Associate Degree/Higher Diploma at HKQF Level 4 in relevant disciplines awarded by local educational institutions, or</li> <li>• Recognized qualification at HKQF Level 4 or equivalent in relevant discipline by recognized educational institutions</li> </ul> <p>Completion of an adequate number of relevant modules in related areas during the study for the qualification as noted above is required so that the applicant is eligible to apply for exemption that amounts to the first two years of study of the programme. If the applicants' completed modules do not amount to the exemption of the first two years of study of the programme, applicants must take bridging modules, which are comparable with those in the Wrexham University's first two years' of modules in terms of curriculum content, level and volume of study before admission to Year 3. This ensures that their prior qualifications plus the bridging modules collectively cover the first two years of the programme.</p> <p><b>English language proficiency requirement</b></p> <ul style="list-style-type: none"> <li>• HKDSE Level 3 or above in English Language; or</li> </ul>

Section 1 – regulatory details	
	<ul style="list-style-type: none"> <li>• The prior qualification plus bridging modules with HKIT (if any) used for admission are taught and assessed in English; or</li> <li>• Having met WU's English language requirement for bachelor's degree programmes which includes IELTS (Academic) at 6.0 with no individual skill score below 5.5.</li> </ul> <p><b>Record of Prior (Experiential) learning</b> Applicants may enter the programme at various levels with Recognition of Prior Learning (RPL) or Recognition of Prior Experiential learning (RPEL) in accordance with the University General Regulations.</p>

## Section 2 – programme details

### 2.1 Aims of the programme

The BSc Computer Science programme aims to provide students with a strong foundation in computer science principles, theories, and practical skills. It will provide students with a comprehensive understanding of core computer science concepts, as well as the theoretical elements of computer science. This course aims to offer hands-on experience through lab work, and coding assignments, and foster an understanding of ethical issues related to computer science including privacy, security, intellectual property, and social implications of technology. Finally, students will be able to specialise in specific areas of computer science, such as machine learning, artificial intelligence, and data analytics. The BSc Computer Science will cover:

- Core Knowledge – Provide a thorough understanding of essential computer science concepts, including data structures, programming languages, computer architecture, software engineering and databases.
- Programming Skills – Develop students' proficiency in programming languages and software development methodologies.
- Theory and Analysis - Introduce students to theoretical aspects of computer science, including formal languages, computability, and complexity theory, enabling them to analyse and solve problems computational problems.
- Software Development Lifecycle – Familiarise students with the software development lifecycle, including requirements analysis, system design, implementation, testing, deployment, and maintenance. Develop the skills needed to plan and execute software development projects.
- Practical Experience – Provide hands-on experience through lab work, coding assignments, and projects to reinforce theoretical concepts and develop practical skills.
- Ethical and Professional Considerations – Foster an understanding of ethical issues related to computer science, including privacy, security, intellectual property, and social implications of technology. Promote professional responsibility, including adherence to professional codes of conduct, accessibility guidelines, effective communication, teamwork, and lifelong learning.
- Communication and Presentation Skills – Develop students written and oral communication skills to effectively convey technical concepts and ideas to both technical and non-technical audiences. Emphasize the importance of clear documentation, technical writing, and effective presentation techniques.
- Adaptability and Lifelong Learning – Cultivate a mindset of continuous learning and adaptability to keep pace with the rapidly evolving field of computer science. Equip students with the skills and resources to stay updated with new technologies, frameworks, and programming languages throughout their professional careers.



## 2.1 Aims of the programme

## 2.2 Programme structure and diagram, including delivery schedule

### Full-time Programme Structure

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
4	COM479	Fundamentals of Machine Learning	20	Core	1
4	COM476	Information Security and Governance	20	Core	1
4	COM480	Database Systems	20	Core	2
4	COM477	Applied Computational Methods	20	Core	2
4	COM474	Programming Fundamentals	20	Core	1 & 2
4	COM475	Computer Systems and Architecture	20	Core	1 & 2
5	COM571	Data Structures and Algorithms	20	Core	1
5	COM577	Secure Software Development	20	Core	1
5	COM570	Cloud, Distributed Architecture	20	Core	1
5	COM572	Machine Learning	20	Core	2
5	COM569	Systems Engineering and Project Management	20	Core	2
5	COM553	Group Project	20	Core	2
6	COM661	Deep Learning Implementation	20	Core	1
6	COM658	Cryptography and Defensive Systems	20	Core	1
6	COM664	Data Analysis and Visualisation	20	Core	2
6	COM659	Emergent Technologies	20	Core	2
6	COM646	Project	40	Core	1 & 2

### Part-time Programme Structure

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)	Year of Study (PT only)
4	COM479	Fundamentals of Machine Learning	20	Core	1	Y2
4	COM476	Information Security and Governance	20	Core	1	Y1
4	COM480	Database Systems	20	Core	2	Y1
4	COM477	Applied Computational Methods	20	Core	2	Y2
4	COM474	Programming Fundamentals	20	Core	1&2	Y1
4	COM475	Computer Systems and Architecture	20	Core	1&2	Y1
5	COM571	Data Structures and Algorithms	20	Core	1	Y2
5	COM577	Secure Software Development	20	Core	1	Y3
5	COM570	Cloud, Distributed Architecture	20	Core	1	Y3
5	COM572	Machine Learning	20	Core	2	Y2
5	COM569	Systems Engineering and Project	20	Core	2	Y3

<b>Part-time Programme Structure</b>						
<b>Level</b>	<b>Module Code</b>	<b>Module Title</b>	<b>Credit Value</b>	<b>Core/ Option</b>	<b>Delivery (i.e. semester 1,2)</b>	<b>Year of Study (PT only)</b>
		Management				
5	COM553	Group Project	20	Core	2	Y3
6	COM571	Deep Learning Implementation	20	Core	1	Y4
6	COM577	Cryptography and Defensive Systems	20	Core	1	Y4
6	COM570	Data Analysis and Visualisation	20	Core	2	Y4
6	COM572	Emergent Technologies	20	Core	2	Y4
6	COM569	Project	40	Core	1&2	Y5

2.3 Programme Learning Outcomes									
No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)
1	Apply essential facts, concepts, principles, and theories relating to software/web design, development, and production as part of the wider computing specialism through practical work, design exercises and case studies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Identify the appropriateness of a range of development tools for the creation of software/web applications and apply them to computing-based scenarios	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Demonstrate awareness of differing disciplines within the context of software/web creation and identify a subject area for further research and study.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Identify and explore key concepts and practise related to software creation within the wider context of the computing and digital industries. Relate practice to wider social ethical, economical and sustainability issues.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Explore problems to identify requirements and experiment with solutions to computing-based problems or design briefs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Relate basic numeracy, literacy, and algebraic competencies to the context of computing using relevant software, tools, and strategies by way of technical problems and design solutions.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Apply the fundamentals of critical thought and research skills to a range of contextualised tasks using clear communication methods.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Develop an ability to explore and recognise any risks or safety aspects that may be involved in their work and to the relevance of selected professional, legal, moral, social and ethical issues; communicate the results of their study/work accurately and reliably, and with structured and coherent arguments.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Develop a basic understanding and application of programming concepts including basic algorithms, and data structures. Develop core skills in problem-solving and teamwork using a collaboration of software	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.3 Programme Learning Outcomes									
No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)
	development tools, and basic project management skills, with considerable guidance provided by tutors.								
10	Understand the fundamental principles and concepts of computer science, including computational problem solving.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Develop basic skills in software development and programming, to become familiar with basic coding, debugging, testing in development environments and tools.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Develop a foundational understanding of programming concepts and develop basic proficiency in writing programme.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Identify the importance of social interaction, communication and diversity as part of employability skillsets and apply them within the learning environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Apply the use of agile methodologies as part of team-based organisation and group work on a small-scale computing project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Show an understanding of the opinions of other people and have flexibility in considering alternatives and opinions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Demonstrate basic organisation skills, goal setting and time-management to manage own learning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Analyse the significance of key concepts, principles, theories, and practices that underpin to software/web design, development, and production as an academic discipline by exploring the boundaries of computing through practical work, design exercises and case studies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Compare and contrast a range of development tools and relate them to workflows, practices, and outputs in the creation of software/web applications.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Differentiate differing roles with the context of software/web creation and demonstrate practical work, research, and study as part of a subject specialism.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Analyse key practice areas of software/web design, development, and production against the wider context of the computing and digital	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.3 Programme Learning Outcomes									
No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)
	industries. Interpret wider social, ethical, economical and sustainability issues as part of analysing ongoing practice.								
21	Identify computing-based problems and analyse requirements to compare and propose solutions using relevant tools and strategies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Apply numeracy, literacy, and algebraic competencies as part of the software/web design, development, art, and production process and apply it through contextualised practical work.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Analyse information from a range of sources to make an argued case and enhance ongoing practice.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Use a range of established techniques using experiential learning exercises, to explore and recognise the relevance of selected professional, legal, moral, social and ethical issues in their work and to communicate the results of their study/work accurately and reliably, and with structured and coherent arguments.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Demonstrate an appreciation of programming concepts including more advanced algorithms, and data structures. Further develop core skills in problem-solving and teamwork using a collaboration of software development tools, methodologies and project management skills with some guidance provided as appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Develop the ability to analyse complex problems, identify appropriate algorithms and data structures, and design efficient solutions using techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Apply principles of software development and programming for larger-scale projects incorporating additional skills to coordinate and deliver software solutions.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Build on the foundation skills and develop a higher level of proficiency in programming languages moving to more complex programmes.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	Demonstrate and reflect on social interaction, communication and diversity within the learning environment to relate that to core employment and the context of the computing industry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Analyse the use of agile methodologies as part of team- based organisation and group work on a computing project to enhance team communication and management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.3 Programme Learning Outcomes									
No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)
31	Demonstrate the ability to take the perspective of others and identify the similarities and differences between two approaches to the solution of a given problem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	Demonstrate effective personal organisation skills, goal setting and time-management to manage own learning with a focus on subject specialisms.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Evaluate broad areas of the knowledge bases of the discipline of computing and an appreciation of the principles, theories and practices that underpin software/web design, development, and production as an academic discipline.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
34	Select and deploy established techniques and tools to develop software/web applications for computing- based problems and briefs with the justification of applied strategies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
35	Appraise differing roles with the context of software/web creation against technical and design skills, and relate them to the wider, team-based skillset industry practice.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
36	Fully assess the wider social, ethical, economical and sustainability issues as part of practical work and relate computing products within the context of the wider computing and digital industries.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
37	Develop self-reliance and confidence in the analysis of problems, identify requirements and propose and evaluate alternative solutions for computing-based problems using relevant tools and strategies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
38	Appraise numeracy, literacy, and algebraic competencies as part of the software/web design, development, and production process and apply it through contextualised practical work.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
39	Evaluate information by collecting of a range of facts/ideas/elements in an argued case and produce new ideas in closely defined situations to enhance ongoing practice.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
40	Demonstrate technology industry acumen, and recognising the relevance of legal, professional, moral, social and ethical issues in the workplace and the wider environment. Able to inform and adapt their work to satisfy these issues.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
41	Gain a deeper understanding of the skills, tool and technologies. Develop proficiency in research methods and demonstrate advance programming and software systems development skills, frameworks, and engineering principles. Evolve and expand skills to incorporate security tools and techniques, with minimal guidance.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2.3 Programme Learning Outcomes									
No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)
42	Gain a deeper understanding of computer science topics and explore advanced computational problem-solving techniques.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
43	Design and develop complex software systems incorporating software engineering principles and practices. Demonstrate knowledge and understanding of the software development frameworks, tools and technologies relevant to the chose domain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
44	Demonstrate advanced competency in software development by designing and implementing complex software systems. Gain a proficiency in software design patterns, software architecture and develop skills in handling larger-scale projects. Conduct independent research and apply critical thinking skills to solve complete problems.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
45	Demonstrate a high-level of social interaction, communication and diversity within the learning environment a further communication-based tasks to a variety of audiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
46	Evaluate the use of agile methodologies as part of team- based organisation and multi-disciplinary group work on a computing project to ensure high-level team communication and management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
47	Demonstrate the ability to take the perspective of others; compare the strengths and weaknesses of alternative interpretations determining the credibility of a source of information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
48	Demonstrate a high-level of personal learning by using organisational and time-management skills to set appropriate goals for improving project work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
49	Evaluate and conceptualise the discipline of computing as part of the wider computing specialism. Assess advanced concepts, principles and theories relating to software/web design, development, and production and demonstrate them through graduate-level project work.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
50	Demonstrate independence, confidence and flexibility in evaluating and applying a range of development tools for the creation of software/web applications and assets for selected computing-based problems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
51	Fully conceptualise differing roles with the context of software/web creation against technical and design skills, and relate them to the wider, team- based skillset industry practice.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2.3 Programme Learning Outcomes									
No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)
52	Fully evaluate the wider social, ethical, economical and sustainability issues as part of graduate-project work and relate computing products within the context of the wider computing and digital industries.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
53	Integrate learned theory and techniques with practical experience to analyse problems, identify requirements and propose and critically evaluate alternative solutions for computing-based problems using relevant tools and strategies.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
54	Appraise numeracy, literacy, and algebraic competencies a key part of the software/web design, development, art, and production process and demonstrate graduate level competencies through contextualised practical and project work.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
55	Rigorously apply research methods to relate and collect facts/ ideas/ elements in an argued case and disseminate information with clear communication to ensure professional practice.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
56	Effective self-management in terms of time; ability to conduct research independently or as a team, into legal, professional, moral, social and ethical issues.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
57	Using advanced skills and research methods demonstrate advance programming and software systems development skills, frameworks, and engineering principles. Evolve and expand new concepts to incorporate security tools and techniques, working autonomously.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
58	Further specialize in a particular area of computer science, and demonstrate in-depth research, analysis, showcasing complex problems in computer science.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
59	Further specialise to gain practical skills specific to the chosen specialisation, developing and implementing applications following the results of an in-depth research project.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
60	Further specialise to gain advanced competency in software development. Conduct in-depth research and demonstrate advanced analytical and problem-solving skills. Critically evaluate and apply advanced theories, models and techniques, and communication complex ideas effectively both orally and in writing.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
61	Have a full conceptualisation of social interaction, communication and diversity within the learning environment and relate that to further employable, computing industry- related practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2.3 Programme Learning Outcomes									
No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)
62	Have a full conceptualisation of the use of agile methodologies in the wider computing and digital industries to manage professional teams and projects including being able to demonstrate basic negotiation and leadership skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
63	Demonstrate the ability to take the perspective of others; articulate the strengths and weaknesses of the suggestions of arguments posed and recognize the underlying agendas and motivations of individuals and groups involved in a given situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
64	Demonstrate a graduate-level of personal learning by using organisational and time- management skills to set appropriate goals to continue to hone-skills outside the learning environment or in further employment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Note: K- Knowledge and understanding; I-Intellectual Skills; S-Subject Skills; P-Practical, professional and employability skills

## 2.4 Learning and teaching strategy

The BSc (Hons) Computer Science programme suite will adopt the Computing subject area model for Learning, Teaching and Assessment, which is underpinned by a university-wide framework such as the Active Learning Framework (ALF) and the Strategy for Supporting Student Learning and Achievement (SSSLA). The programme is also designed to facilitate key outcomes for the delivery of Employability Skills and contemporary industry methods and tools to assist the student to become an independent learner while still supporting students in their transition to the workforce or postgraduate education. The curriculum is designed to encourage an appreciation for learning, to develop a professional work ethic enriched by current research, industrial engagement, and the development of transferable skills.

Students on the programme will benefit from a number of core project modules that are designed to simulate the realities of cross-discipline industry practise alongside key subject-specific modules that facilitate theoretical and practical experience of working with a range of industry aligned tools and software.

Scheduled learning and teaching activities are broad and varied in nature to provide students with an enriched learning experience and may include attendance at active learning sessions, industry-focused guest talks, practical exercises, and workshops.

The programme provides students with knowledge in subject disciplines that support industry best-practice and real-world application of skills within the various computing disciplines. Learning is supported with a multidisciplinary and research-based approach to learning with a focus on emerging technologies and theories to equip students with the skillsets required for rapid future growth in this area.

## 2.5 Assessment strategy

In line with ALF, innovative assessments strategies are used throughout the programmes and are always delivered in context and/or as part of portfolio building exercises to enhance student achievement and employability. Specifically, as part of all projects, students' achievement is tracked and managed through cloud-based systems. This not only delivers complete transparency of work allocations in student group projects but delivers an industry simulated environment which further enhances student awareness of the industry context of their work.

The modules assessment methods within the computing discipline put a strong emphasis on students' abilities and their mastery of specific skills or knowledge areas, which allows for a more tailored and individualised approach. To support students' learning, formative assessments are used throughout the module delivery, including activities such as self-reflection, peer assessments, and other effective feedback approaches.

For modules that are entirely assessed through coursework and portfolio-based assessment, milestone progress reviews are conducted as part of the formative assessment process, providing personalised feedback to students. These milestones not only offer support for the students' progress but also help them to stay on track towards meeting the learning outcomes and achieving the intended deliverables of the module.

For modules that have embedded industry-based certification, there will be an opportunity for students to submit a coursework-based submission as preparation to the final module assessment in order to obtain personalised feedback and monitor progress. The final assessment will be conducted in line with the requirements of the industry certification and may include a remote proctored in-class assessment.

## 2.6 Disclaimer

Throughout quality assurance processes we have ensured that this programme engages with and is aligned to:

- [Academic Regulations](#)
- [The University Skills Framework](#)
- [Welsh Language Policy](#)
- [Equality and Diversity Policy](#)
- [The Student Union offers support for students](#)

## Section 3 – Programme set up (office use only)

3.1	Framework	
3.2	Board dates (progression)	
3.3	Cost centre	GACP
3.4	Course type (HESA)	Choose an item.
3.5	Fee model	Other If other, please specify Overseas Partner Fees will apply
3.6	In-year resits	
3.7	Are any modules taught over either multiple periods or across the HESA year (defined as running 1st August - 31st July)	Choose an item.
3.8	Progression points	
3.9	Semesters per intake	Choose an item. If other, please specify
3.10	Semesters per progression point	Choose an item. If other, please specify
3.11	Start and end dates	Standard September Standard February
3.12	Student funding model	Local government funding arrangements will apply
3.13	Does the Suitability for Practice Procedure apply to the programme?	N/A
3.14	Programme Leader	Bindu Jose
3.15	Date of Approval	14 <sup>th</sup> June 2024
3.16	Date and type of Revision	