# Prifysgol **Wrecsam Wrexham** University

# **PROGRAMME SPECIFICATION**

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**UG Programme Directory** 

## **Section 1 Regulatory Details**

Awarding body	Wrexham University
Teaching institution	Wrexham Plas Coch Campus
Final award and programme title (Welsh)	Computing Teach-Out Provision (Top Up):
	BSc (Anrh) Cyfrifiadura BSc (Anrh) Cyfrifiadureg BSc (Anrh) Seiberddiogelwch
	Computing Current Provision (Top Up):
	BSc (Anrh) Cyfrifiadureg BSc (Anrh) Peirianneg Meddalwedd BSc (Anrh) Seiberddiogelwch
	Computing Teach-Out Provision (Top Up) with Pre- Bachelor's:
	BSc (Anrh) Cyfrifiadura BSc (Anrh) Cyfrifiadureg BSc (Anrh) Seiberddiogelwch
	Computing Current Provision (Top Up) with Pre- Bachelor's:
	BSc (Anrh) Cyfrifiadureg BSc (Anrh) Peirianneg Meddalwedd BSc (Anrh) Seiberddiogelwch
Final award and programme title (English)	Computing Teach-Out Provision (Top Up):
	BSc (Hons) Computing BSc (Hons) Computer Science BSc (Hons) Cyber Security
	Computing Current Provision (Top Up):
	BSc (Hons) Computer Science BSc (Hons) Software Engineering BSc (Hons) Cyber Security
	Computing Teach-Out Provision (Top Up) with Pre- Bachelor's:
	BSc (Hons) Computing BSc (Hons) Computer Science BSc (Hons) Cyber Security
	Computing Current Provision (Top Up) with Pre- Bachelor's:
	BSc (Hons) Computer Science BSc (Hons) Software Engineering BSc (Hons) Cyber Security
Exit awards and titles	N/A



Credit requirements	Computing Teach-Out Provision (Top Up):
	BSc (Hons) Degree – 120 credits at level 6
	Computing Teach-Out Provision (Top Up) with Pre- Bachelor's:
	BEng (Hons) Degree – 200 credits, (120 credits gained at level 6, 60 credits at level 5, and 20 credits at level 4)
	Computing Current Provision (Top Up):
	BSc (Hons) Degree – 120 credits at level 6
	Computing Current Provision (Top Up) with Pre- Bachelor's:
	BEng (Hons) Degree – 200 credits, (120 credits gained at level 6, 60 credits at level 5, and 20 credits at level 4)
Does the programme offer Foundation Year route?	No
Placement/work-based learning	N/A
opportunities Faculty / Department	Eaculty of Arts, Computing and Engineering (EACE)
HECoS Code	
	Computing:
	Computing: 100367 Computer Science: 100366
	Software Engineering: 100374 Cyber Security: 100376
Intake Points	Computing Teach-Out Provision (Top Up):
	September 25/26 Intake only
	Computing Teach-Out Provision (Top Up) with Pre- Bachelor's:
	August 25/26 Intake only
	Computing Current Provision (Top Up):
	September Intake, 26/27 academic year onwards
	September Intake, 26/27 academic year onwards Computing Current Provision (Top Up) with Pre-
	September Intake, 26/27 academic year onwards Computing Current Provision (Top Up) with Pre- Bachelor's:
	September Intake, 26/27 academic year onwards Computing Current Provision (Top Up) with Pre- Bachelor's: August Intake, 26/27 academic year onwards
Mode of Attendance	September Intake, 26/27 academic year onwards <b>Computing Current Provision (Top Up) with Pre-</b> <b>Bachelor's:</b> August Intake, 26/27 academic year onwards Full time
Mode of Attendance Normal Programme Length	September Intake, 26/27 academic year onwards <b>Computing Current Provision (Top Up) with Pre- Bachelor's:</b> August Intake, 26/27 academic year onwards Full time 1 year
Mode of Attendance Normal Programme Length Mode of Study and Location of delivery	September Intake, 26/27 academic year onwards <b>Computing Current Provision (Top Up) with Pre- Bachelor's:</b> August Intake, 26/27 academic year onwards Full time 1 year Full Time at Wrexham Plas Coch Campus
Mode of Attendance Normal Programme Length Mode of Study and Location of delivery Language of delivery	September Intake, 26/27 academic year onwards <b>Computing Current Provision (Top Up) with Pre- Bachelor's:</b> August Intake, 26/27 academic year onwards Full time 1 year Full Time at Wrexham Plas Coch Campus English
Mode of Attendance Normal Programme Length Mode of Study and Location of delivery Language of delivery Welsh Medium Provision	September Intake, 26/27 academic year onwards Computing Current Provision (Top Up) with Pre- Bachelor's: August Intake, 26/27 academic year onwards Full time 1 year Full Time at Wrexham Plas Coch Campus English The programmes will be delivered through the medium of English. Students are entitled to submit assessments in the medium of Welsh.
Mode of Attendance         Normal Programme Length         Mode of Study and Location of         delivery         Language of delivery         Welsh Medium Provision         Professional, Statutory or Regulatory         Body (PSRB) accreditation	September Intake, 26/27 academic year onwards Computing Current Provision (Top Up) with Pre- Bachelor's: August Intake, 26/27 academic year onwards Full time 1 year Full Time at Wrexham Plas Coch Campus English The programmes will be delivered through the medium of English. Students are entitled to submit assessments in the medium of Welsh. All programmes have been designed to align with the requirements of the British Computer Society (BCS) and accreditation will be sought in the next accreditation visit.



	This information is correct at the time of validation, please refer to the PSRB register for current accreditation status.
External reference points	QAA Subject Benchmark Statement: Computing March (2022)
	https://www.qaa.ac.uk/the-quality-code/subject- benchmark-statements/computing
	The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies
	https://www.qaa.ac.uk/quality-code/qualifications- and-credit-frameworks
Entry Requirements	The University website sets out the approved entry requirements for each programme, including minimum qualifications and English Language requirements
	Direct Entry Criteria
	For direct entry to the top up provisions, applicants must have achieved a qualification at Level 5 or better in a relevant discipline.
	Entry to the programme may be gained by students who can present one of the pieces of evidence listed below:
	<ul> <li>a) Have passed a Dip HE in a relevant discipline.</li> <li>b) Have passed a French DUT.</li> <li>c) Have achieved a minimum of 120 ECTS credits in a relevant discipline.</li> <li>d) Have passed a Foundation Degree or HND in a cognate discipline.</li> <li>e) Have passed a qualification from an EU or other overseas country equivalent, as defined as equivalent NARIC, to a DipHE or better in a relevant discipline.</li> <li>Such as State Certified Technician (Staatlich geprüfter Techniker) or Mittelland Higher Technical (Höhere Fachschule Technik Mittelland)</li> </ul>
Record of Prior (Experiential) learning	All students must meet entry requirement to enrol on the programme.
Is DBS check required on entry?	No
Does the Suitability for Practice	No
Procedure apply to the programme?	There are no derogations to academic regulations in
	place for Computing provision.
Date of Approval	04/12/2024
Date and type of Revision	To be completed by Q&R

# **Section 2 Programme Details**

## Aims of the programme

## BSc (Hons) Top-up Programmes (120 Credits)

The primary aim of the top-up programme is to provide students who have completed relevant Level 5 qualifications (such as diplomas or foundation degrees) with an opportunity to



complete the final year of a bachelor's degree in computing. This allows students to enhance their academic qualifications and graduate with an honours degree.

The programme is designed to equip students with advanced technical knowledge and professional skills that are aligned with industry demands. It aims to deepen their understanding of core computing concepts, such as design, analysis, and problem-solving, preparing them for leadership roles in their respective fields.

By offering a UK qualification, the top-up programme aims to enhance students' employability on an international level. The curriculum focuses on developing the skills necessary to succeed in a global job market, particularly in sectors where computing professionals are in high demand.

The programme seeks to develop students' ability to critically analyse and solve complex problems using innovative approaches. By emphasising emerging technologies and modern computing practices, students are encouraged to be creative thinkers and effective problem-solvers in real-world applications.

## BSc (Hons) Top-up Programmes with Pre-Bachelor's (200 Credits)

The top-up programme with pre-bachelor's aims to support international students and learners with diverse educational backgrounds who may require additional academic preparation before entering the final year. The integrated pre-bachelor's component (STEM Summer School) allows students to upgrade their study skills, ensuring a smoother transition to Level 6.

This extended version of the top-up programme provides a more holistic academic experience by including credits at Levels 4 and 5, in addition to Level 6. This comprehensive structure helps students build a stronger foundation of knowledge before advancing to more specialised topics in computing.

By embedding the STEM Summer School into the programme, this version ensures that students' progress seamlessly through Levels 4, 5, and 6, with all credits fully integrated into a single transcript. This reduces reliance on Recognition of Prior Learning (RPL) and offers students a cohesive academic experience with clear credit accumulation

In summary, the top-up programme with pre-bachelor's offers a more robust preparatory phase for students, while the standard top-up programme focuses on completing the final year of study. Both are designed to meet the evolving demands of the computing industries and to enhance students' global employability.

## Distinctive features of the programme

## BEng/BSc (Hons) Top-up Programmes (120 Credits)

The BSc (Hons) Top-up Programmes offer students a streamlined pathway to complete their bachelor's degree in computing within one year. A distinctive feature of these programmes is their focused delivery of advanced-level content, enabling students to build upon prior Level 5 qualifications, such as diplomas or foundation degrees. This approach allows students to deepen their expertise in areas like computer science, software engineering or cybersecurity, while gaining industry-relevant skills that align with the demands of the global job market.

Another key feature of the programme is its emphasis on international recognition. With all coursework concentrated at Level 6, the programme ensures compliance with international educational standards. Students benefit from a UK qualification that enhances their employability in various international contexts.

Additionally, the programme's curriculum focuses on emerging technologies and advanced analytical techniques, preparing graduates for the dynamic challenges of their industries. Students are encouraged to engage in critical problem-solving and innovative thinking, which equips them to take on leadership roles in computing sectors worldwide.



## BSc (Hons) Top-up Programmes with Pre-Bachelor's (200 Credits)

The BSc (Hons) Top-up Programmes with Pre-Bachelor's provide a unique and comprehensive learning journey for students who require additional academic preparation before entering Level 6. A key distinctive feature of these programmes is the integration of the STEM Summer School as a pre-bachelor's component, which allows students to strengthen their study skills and gain foundational knowledge. This structure supports international students or those from diverse educational backgrounds, ensuring they are well-prepared for the rigours of the final year.

Unlike the standard top-up programme, this version offers a broader credit structure, with students earning 200 credits across Levels 4, 5, and 6. This extended learning pathway ensures a smooth academic transition, allowing students to accumulate credits seamlessly while building a solid foundation in core computing concepts.

In summary, these top-up programmes offer a flexible, internationally recognised qualification with strong regional and global engagement. They are designed to meet the academic, professional, and personal needs of students from diverse backgrounds, preparing them for future success in computing sectors.

## Programme Structure Diagram, including delivery schedule

## Full-time Delivery BSc (Hons) Computing Top-up Programmes (Teach-Out Provision)

## **BSc (Hons) Computing**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 6	COM644	IT Project Management	20	Core	1
Level 6	COM640	Advanced Mobile Development	20	Core	1
Level 6	COM641	Distributed Data and Data Analytics	20	Core	1
Level 6	COM643	Future Technologies	20	Core	2
Level 6	COM646	Project	40	Core	1&2

## **BSc (Hons) Computer Science**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 6	COM644	IT Project Management	20	Core	1
Level 6	COM648	Compatibility and Optimisation	20	Core	1
Level 6	COM641	Distributed Data and Data Analytics	20	Core	1
Level 6	COM643	Future Technologies	20	Core	2
Level 6	COM646	Project	40	Core	1&2

## **BSc (Hons) Cyber Security**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 6	COM644	IT Project Management	20	Core	1
Level 6	COM645	Network Security	20	Core	1
Level 6	COM642	Ethical Hacking	20	Core	1
Level 6	COM643	Future Technologies	20	Core	2
Level 6	COM646	Project	40	Core	1 & 2



# Full-time Delivery BSc (Hons) Computing Top-up Programmes (Teach-Out Provision) with Pre-Bachelor's

BSc (Hons)	Computing
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Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	COM644	IT Project Management	20	Core	1
Level 6	COM640	Advanced Mobile Development	20	Core	1
Level 6	COM641	Distributed Data and Data Analytics	20	Core	1
Level 6	COM643	Future Technologies	20	Core	2
Level 6	COM646	Project	40	Core	1&2

## **BSc (Hons) Computer Science**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	COM644	IT Project Management	20	Core	1
Level 6	COM648	Compatibility and Optimisation	20	Core	1
Level 6	COM641	Distributed Data and Data Analytics	20	Core	1
Level 6	COM643	Future Technologies	20	Core	2
Level 6	COM646	Project	40	Core	1&2

## **BSc (Hons) Cyber Security**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	COM644	IT Project Management	20	Core	1
Level 6	COM645	Network Security	20	Core	1
Level 6	COM642	Ethical Hacking	20	Core	1
Level 6	COM643	Future Technologies	20	Core	2
Level 6	COM646	Project	40	Core	1 & 2

Full-time Delivery BSc (Hons) Computing Top-up Programmes (Current Provision)

## **BSc (Hons) Computer Science**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 6	COM658	Cryptography and Defensive Systems	20	Core	1



Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 6	COM661	Deep Learning Implementation	20	Core	1
Level 6	COM659	Emergent Technologies	20	Core	2
Level 6	COM664	Data Analysis and Visualisation	20	Core	2
Level 6	COM646	Project	40	Core	1&2

## BSc (Hons) Software Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 6	COM658	Cryptography and Defensive Systems	20	Core	1
Level 6	COM665	DevOps	20	Core	1
Level 6	COM659	Emergent Technologies	20	Core	2
Level 6	COM662	Software Development and Optimisation	20	Core	2
Level 6	COM646	Project	40	Core	1&2

## **BSc (Hons) Cyber Security**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 6	COM658	Cryptography and Defensive Systems	20	Core	1
Level 6	COM663	Digital Forensics 20		Core	1
Level 6	COM660	Threat Detection and Incident Response	20	Core	2
Level 6	COM666	Security Optimisation & Automation	20	Core	2
Level 6	COM646	Project	40	Core	1 & 2

Full-time Delivery BSc (Hons) Computing Top-up Programmes with Pre-Bachelor's (Current Provision)

## **BSc (Hons) Computer Science**

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	COM658	Cryptography and Defensive Systems	20	Core	1
Level 6	COM661	Deep Learning Implementation	20	Core	1
Level 6	COM659	Emergent Technologies	20	Core	2
Level 6	COM664	Data Analysis and Visualisation	20	Core	2
Level 6	COM646	Project	40	Core	1&2

## **BSc (Hons) Software Engineering**



Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	COM658	Cryptography and Defensive Systems	20	Core	1
Level 6	COM665	DevOps	20	Core	1
Level 6	COM659	Emergent Technologies	20	Core	2
Level 6	COM662	M662 Software Development and Optimisation		Core	2
Level 6	COM646	Project	40	Core	1 & 2

# BSc (Hons) Cyber Security

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2 )
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	COM658	Cryptography and Defensive Systems	20	Core	1
Level 6	COM663	Digital Forensics	20	Core	1
Level 6	COM660	Threat Detection and Incident Response	20	Core	2
Level 6	COM666	Security Optimisation & Automation	20	Core	2
Level 6	COM646	Project	40	Core	1&2



Boc (nons) computing rop-op (reach-out riovision) - riogramme of ucture & Denver	<b>BSc (Hons)</b>	Computing	Top-Up (Teac	h-Out Provision)	– Programme	Structure & Delivery
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	BSc (Hons) Computing	BSc (Hons) Computer Science	BSc (Hons) Cyber Security			
		COM644 IT Project Management				
-	COM640	COM648	COM645			
S	Advanced Mobile Development	Compatibility and Optimisation	Network Security			
	СОМ	641	COM642			
	Distributed Data ar	nd Data Analytics	Ethical Hacking			
5	COM643					
S	Future Technologies					
-2		COM646				
S1		Project (40 Credits)				



BSc (	Hone)	Computi	na Ton	l In with	Pro-Bachelors	Teach-Out Provision	- Pro	gramme Structure & Delive	srv.
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	BSc (Hons) Computing	BSc (Hons) Computer Science	BSc (Hons) Cyber Security			
		LAN474 English for STEM				
e	ENG5B7 Analytical Techniques					
S		ENG5B8 Emerging Technologies				
	ENG5B8 Research Methodologies					
		COM644 IT Project Management				
S1	COM640 Advanced Mobile Development	<b>COM648</b> Compatibility and Optimisation	COM645 Network Security			
	COM Distributed Data ar	COM642 Ethical Hacking				
S2	COM643 Future Technologies					
S1-2	COM646 Project (40 Credits)					



Level 6: BSc (	Hons) Com	puting Top-	Up (Curren	t Provision) -	- Programme	Structure & De	eliverv
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	BSc (Hons) Computer Science	BSc (Hons) Software Engineering	BSc (Hons) Cyber Security
1		COM658 Cryptography and Defensive Systems	
S	COM661	COM665	COM663
	Deep Learning Implementation	DevOps	Digital Forensics
	СОМ	COM660	
5	Emergent Te	Threat Detection and Incident Response	
S	COM664	COM662	COM666
	Data Analysis and Visualisation	Software Development and Optimisation	Security Optimisation & Automation
-2		COM646	
S1			



	BSc (Hons) Computer Science	BSc (Hons) Software Engineering	BSc (Hons) Cyber Security					
		LAN474 English for STEM						
	ENG5B7 Analytical Techniques							
ίλ		ENG5B8 Emerging Technologies						
	ENG5B8 Research Methodologies							
₹		COM658 Cryptography and Defensive Systems						
S1	COM661 Deep Learning Implementation	COM665 DevOps	COM663 Digital Forensics					
~~~	COM Emergent Te	COM659 Emergent Technologies						
S2	<b>COM664</b> Data Analysis and Visualisation	COM666 Security Optimisation & Automation						
S1-2		COM646 Project (40 Credits)						

## Level 6: BSc (Hons) Computing Top-Up with Pre-Bachelors (Current Provision) – Programme Structure & Delivery



## **Programme Learning Outcomes**

## Full-time Delivery BSc (Hons) Computing/Computer Science/Cyber Security Top-up Programmes (Teach-Out Provision)

No.	Learning Outcome	κ	I	S	Ρ	Level 6 (Hons)
1	Demonstrates confidence and reveals a clear understanding of the boundaries of existing and emerging technology and the limits of its application, and of the range of conventional design methods and the types of judgement employed by computing professionals.	$\boxtimes$				
2	Confidence and flexibility in applying a range of programming tools for the creation of applications for selected business problems, and in the application of knowledge and skills appropriate to their solution.	$\boxtimes$				$\boxtimes$
3	Critical and reflective about the use of software testing, design and evaluation methodologies and tools, with full understanding of the associated risks, controls and potential impact.	$\boxtimes$				$\boxtimes$
4	Reflect upon own practices and conduct in carrying out a substantive project and discuss the social, legal, ethical, moral, economic and sustainability issues that are relevant to the project.	$\boxtimes$				$\boxtimes$
5	Consistently show confidence and independence in understanding and modelling efficient data structures and algorithms to address real world problems.	$\boxtimes$				$\boxtimes$
6	Integrates learned theory and techniques with practical experience to analyse problems, identify requirements and propose and critically evaluate alternative solutions for computer software systems with informed understanding.		$\boxtimes$			$\boxtimes$
7	Confidently applies a range of specialist numerical/mathematical and literacy skills as appropriate to the specialist subject area.		$\boxtimes$			$\boxtimes$
8	Carries out confident and accurate selection and application of principles and procedures to the solution of a range of computing situations and problems, working autonomously.		$\boxtimes$			$\boxtimes$
9	Effective self- management in terms of time; ability to conduct research independently or as a team, into legal, professional, moral, social and ethical issues. Able to inform and adapt their work to satisfy these issues Demonstrates an ability to carry out research and critical thinking		$\boxtimes$			$\boxtimes$
10	The ability to apply appropriate research methods to collate facts/ ideas/ elements in support of a well- structured argument; design solutions to problems and evolve new concepts, working autonomously.			$\boxtimes$		$\boxtimes$
11	Select and evaluate own use of IT project management methods and tools in a self-led and managed project.			$\boxtimes$		$\boxtimes$
12	Specify and write computer programs or software in response to loosely defined problem scenarios and evaluate the quality of the solution.			$\boxtimes$		$\boxtimes$
13	Independently integrate big data sets and analytics into specific projects and/or consider their appropriateness in emerging technology scenarios.			$\boxtimes$		$\boxtimes$



No.	Learning Outcome	к	I	s	Ρ	Level 6 (Hons)
14	Provide professional levels of information through a variety of verbal and non-verbal communication mediums and reflect upon own interaction and ability to support own opinions and arguments for a variety of audiences.				$\boxtimes$	$\boxtimes$
15	Interacts effectively within learning or professional groups; demonstrates appropriate negotiating, role, leadership and group support skills to an advanced level.				$\boxtimes$	$\boxtimes$
16	Uses and accesses a limited selection of more specialist IT skills related to subject specific software for analysing business data. Conducts effective searches for information to identify potential computing resources for a specific purpose and critically evaluate their merit.				$\boxtimes$	$\boxtimes$
17	With minimal guidance, manages own learning using a wide range of resources appropriate to the IT profession; seeks and makes effective use of feedback. Self- reflection and criticality including self - awareness, openness and sensitivity to diversity in terms of people, cultures, business, management and marketing issues.				$\boxtimes$	$\boxtimes$
18	Demonstrate the ability to take the perspective of others; articulate the strengths and weaknesses of the suggestions of arguments posed; recognize the underlying agendas and motivations of individuals and groups involved in a given situation.				$\boxtimes$	$\boxtimes$

## Full-time Delivery Computing Top-up Programmes (Current Provision)

## BSc (Hons) Computer Science

No.	Learning Outcome	к	I	S	Ρ	Level 6 (Hons)
1	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.	$\boxtimes$				
2	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.	$\boxtimes$				$\boxtimes$
3	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.	$\boxtimes$				$\boxtimes$
4	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.	$\boxtimes$				$\boxtimes$
5	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.		$\boxtimes$			



No.	Learning Outcome	к	I	S	Ρ	Level 6 (Hons)
6	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.		$\boxtimes$			$\boxtimes$
7	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.		$\boxtimes$			$\boxtimes$
8	Effective self-management in terms of time; ability to conduct research independently or as a team, into legal, professional, moral, social and ethical issues.		$\boxtimes$			$\boxtimes$
9	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.			$\boxtimes$		$\boxtimes$
10	Further specialize in a particular area of computer science, and demonstrate in-depth research, analysis, showcasing complex problems in computer science.			$\boxtimes$		$\mathbb{X}$
11	Further specialise to gain practical skills specific to the chosen specialisation, developing and implementing applications following the results of an in-depth research project.			$\boxtimes$		$\boxtimes$
12	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.			$\boxtimes$		$\boxtimes$
13	Have a full conceptualisation of social interaction, communication and diversity within the learning environment and relate that to further employable, computing industry related practice.				$\boxtimes$	X
14	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.				$\boxtimes$	$\boxtimes$
15	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.				$\boxtimes$	$\boxtimes$
16	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.				$\boxtimes$	$\boxtimes$

## BSc (Hons) Software Engineering



No.	Learning Outcome	к	I	S	Ρ	Level 6 (Hons)
1	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.	$\boxtimes$				$\boxtimes$
2	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.	$\boxtimes$				$\boxtimes$
3	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.	$\boxtimes$				$\boxtimes$
4	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.	$\boxtimes$				$\boxtimes$
5	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.		$\boxtimes$			$\boxtimes$
6	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.		$\boxtimes$			$\boxtimes$
7	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.		$\boxtimes$			$\boxtimes$
8	Effective self-management in terms of time; ability to conduct research independently or as a team, into legal, professional, moral, social and ethical issues.		$\boxtimes$			$\boxtimes$
9	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.			$\boxtimes$		$\boxtimes$
10	Further specialize in a particular area of software engineering, and demonstrate in-depth research, analysis, showcasing complex problems in software engineering.			$\boxtimes$		$\boxtimes$
11	Further specialise to gain practical skills specific to the chosen specialisation, developing and implementing applications following the results of an in-depth research project.			$\boxtimes$		$\boxtimes$
12	Further specialise to gain advanced competency in software engineering. Conduct in-depth research and demonstrate advanced analytical and problem-solving skills in software engineering contexts. Critically evaluate and apply advanced theories, models and techniques, and communication complex ideas effectively both orally and in writing.			$\boxtimes$		$\boxtimes$
13	Have a full conceptualisation of social interaction, communication and diversity within the learning environment and relate that to further employable, computing industry related practice.				$\boxtimes$	$\boxtimes$



No.	Learning Outcome	к	I	S	Ρ	Level 6 (Hons)
14	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.				$\boxtimes$	$\boxtimes$
15	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.				$\boxtimes$	$\boxtimes$
16	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.				$\boxtimes$	$\boxtimes$

# BSc (Hons) Cyber Security

No.	Learning Outcome	к	I	S	Ρ	Level 6 (Hons)
1	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.	$\boxtimes$				X
2	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.	$\boxtimes$				$\boxtimes$
3	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.	$\boxtimes$				$\boxtimes$
4	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.	$\boxtimes$				$\boxtimes$
5	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.		$\boxtimes$			
6	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.		$\boxtimes$			$\boxtimes$
7	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.		$\boxtimes$			$\boxtimes$
8	Effective self-management in terms of time; ability to conduct research independently or as a team, into legal, professional, moral, social and ethical issues.		$\boxtimes$			$\boxtimes$



No.	Learning Outcome	к	I	S	Ρ	Level 6 (Hons)
9	Attain comprehensive understanding of advanced cyber security theories, strategies, principles, and concepts by applying research methods. Evolve and expand new concepts autonomously			$\boxtimes$		$\boxtimes$
10	Critically analyse and apply advanced computational problem-solving and critical thinking skills to address specialized cyber security challenges.			$\boxtimes$		$\boxtimes$
11	Further demonstrate advanced applied practical and technical skills in the chosen specialist area of cyber security, developing and implementing solutions through an in-depth research project.			$\boxtimes$		$\boxtimes$
12	Exhibit advanced competency in system defence, detection, and mitigation in complex and specialised cyber security areas. Conduct in-depth research and demonstrate advanced analytical and problem-solving skills. Critically evaluate and apply advanced theories, models, techniques, and effectively communicate complex ideas both orally and in writing.			$\boxtimes$		$\boxtimes$
13	Have a full conceptualisation of social interaction, communication and diversity within the learning environment and relate that to further employable, computing industry related practice.				$\boxtimes$	X
14	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.				$\boxtimes$	
15	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.				$\boxtimes$	$\boxtimes$
16	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.				$\boxtimes$	$\boxtimes$

## Full-time Delivery BEng/BSc (Hons) Top-up Programmes with Pre-Bachelor's

Students enrolled onto the BSc (Hons) Top-up Programmes with Pre-Bachelor's entry will attain the following additional learning outcomes:

No.	Learning Outcome	κ	I	S	Ρ	Level 4	Level 5
1	Deploy retention and recall strategies to activate a wide range of core STEM vocabulary, common collocations, and idiomatic language to effectively negotiate meaning and mediate communication in the STEM context.	$\boxtimes$				$\boxtimes$	
2	Develop sound application of analytical techniques, and general and specialist computing knowledge and understanding			$\boxtimes$			$\boxtimes$
3	Analyse information from a range of sources to make an argued case and enhance ongoing practice.			$\boxtimes$			$\boxtimes$



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No.	Learning Outcome	к	I	S	Ρ	Level 4	Level 5
4	Assess emergent technologies that have been deployed in the respective field and evaluate various aspects of emerging technologies and their application and impact in the short, medium and long-term future			$\boxtimes$			$\boxtimes$



#### Learning and teaching strategy

The BEng/BSc provisions have shared and subject specific modules, respectively, allowing students to collaborate, engage, and explore their respective chosen programme. The philosophy of the programme reflects and develops the University's strategic mission and aims. The learning and teaching strategy for the programmes accords fully with Wrexham University's Active Learning Framework (ALF) and Strategy for Supporting Student Learning and Achievement (SSSLA) and has been informed by the QAA Subject Benchmark statement for Computing (2022).

The modules are taught through a combination of lectures, seminars, and workshops. An active and inclusive approach is used to engage learners in the topics and will involve individual, group work and flipped learning experiences aligned to the university's Active Learning Framework (ALF). The approach offers students a flexible and adaptive learning experience that can accommodate a range of options that includes both on campus learning and digital resources and mechanisms as a learning blend, as appropriate. This may include synchronous and asynchronous learning.

The Moodle VLE and other on-line materials and resources will be available to support learning. ALF offers a balance between the classroom elements and digitally enabled activity incorporating flexible and accessible resources and flexible and accessible feedback to support learning.

The approach taken towards teaching and learning is based on ALF of learning designed to enable and maximise the abilities of the students to work in a wide variety of fields and disciplines within computing. Thus, they are enabled to become independent, autonomous, and reflective whilst also developing collaborative, strategic and professional capacities. They will develop and demonstrate critical analytical skills and problem-solving capabilities and the ability to be creative, proactive, and innovative. To this end, a variety of teaching and learning methods will be provided.

## The Wrexham University Skills Framework

At Wrexham University we aim to help students develop and enhance key employability skills and capabilities during their study. There are three key areas with different attributes, attitudes and skillsets and the aim is to help students have the opportunity to enhance and develop skills such as resilience, adaptability, confidence, team working, emotional intelligence and communication, creativity and acting ethically and sustainably. Programmes are designed to enable students to develop and enhance these skills via module content, module learning outcomes and assessment opportunities. Each module will help provide different opportunities for developing and enhancing these capabilities.

The programme has been designed using an Employability Level Descriptor in collaboration with the Careers and Employability team. The Employability Level Descriptor document is reviewed as part of validation and following approval will be published in the student programme handbook.

The Careers and Employability team are available to provide additional careers education activities for all programmes as well as individualised information, advice and guidance. Learners gain access to self-directed learning resources by logging into our <u>careers portal</u>. Here students can book professional careers guidance appointments and make employment and volunteering applications and learn to build and develop their CV and applications.

#### Assessment strategy

The programme team are committed to delivering an assessment strategy which is in line with SSSLA and ALF and reflects the requirements of the QAA Subject Benchmark Statement respectively.



A wide range of assessment methods have been adopted in the programmes to meet diverse learning styles and enable the students to meet modular and programme requirements, through either individual or group assessment, and students will be informed as to whether assessment is of a diagnostic, formative, or summative nature. The assessment methods used reflect the needs of the student group and allows for the knowledge and learning outcomes of the programme to be tested as well as allowing for the development and assessment of practical and transferable skills.

There is a commitment to enable students to focus on their own learning needs and to use assessment as a means for evaluating their own practice. Professional body requirements have been integrated into module assessment to foster developmental progression on the programmes, with cognisance paid to how these assessments may impact upon the student's final grade achievement. Where assessed group work is undertaken, students will be expected, through the production of meeting notes and action plans, to demonstrate that they have contributed equally to the task. This element of personal contribution will determine the individual's overall module assessment. i.e., not all students within a group should expect the same mark.

#### **Assessment Methods**

Formative assessment is essential to learning in its aim is to give appropriate and timely feedback to students on their learning, and to help them to improve their future work. Assessment methods will be appropriate for the outcome being assessed. In addition to formal examination, some other forms of the assessments are used.

#### In-Class Tests

In-class tests will comprise distinct types of 'unseen' assessment, such as an 'unseen' paper, or Moodle quiz/questions sat in a controlled environment. An exception to the unseen element is when a case study is required for reference. In-class tests will take place in an appropriate time after the corresponding module contents have been delivered.

Indicative feedback of results will be provided to students within three weeks of the submission date. Official results will be provided in the form of a transcript after assessment boards have been convened.

## Assignment

This is a single task given to the student in the form of a 'brief' defining the assignment requirements at or near the beginning of the module. This may require the student to carry out investigations and literature searches in their own time and under their own initiative or it may require independent problem solving based on work covered in the lectures/tutorials. The work is normally required in the form of a formal report submitted by a given deadline. Sometimes a presentation, either individually or as a group forms part of the assessment.

## Portfolio

This is a term referring to a collection of small, and diverse, exercises whose individual marks are brought together in a single folder to form a single in-course mark. Examples are where a series of laboratory exercises form part of the module. Feedback is given after each exercise (called formative assessment) so that a student is aware of progress made on an on-going basis.

#### **Course work**

For some modules, a course work for case study might be the most appropriate form of assessment whereby the student would investigate a particular scenario, software programme or an instrumentation system. They would analyse the 'subject' and convey their critical opinions; this could be verbally (oral presentation) or a short report. Frequently the student is given three or four scenarios to consider simultaneously, thereby enabling comparison of advantages and disadvantages.



## **Practical Skills**

Assessment of practical skills is covered entirely within practical exercises and the associated reporting, particularly project-based modules. In these modules, practical demonstrations are required as part of a presentation.

## Grading

Assessment will be graded using the suggested criteria grid detailed in line with SSSLA, the criteria will be contextualised for each assessment. All work will be assessed by tutors at Wrexham University. Students will receive written feedback within the target times set out by Wrexham University.

## Plagiarism

Where practicable, Turnitin will be used a tool to support students to develop their academic writing style as well as to detect plagiarism or collaboration.

## **Double Marking and Moderation**

All module assessments will be internally verified with a sample being moderated by the external examiner in accordance with Wrexham University's Regulatory Requirements.

## **Extenuating Circumstances and Deadlines for Submission**

Students will be informed of the penalties which apply for non-submission. Students will be made aware of the procedure relating to extenuating circumstances and will be encouraged to work closely with their tutors should they require support and guidance on this matter.

## Feedback to Students

Feedback, both formal and informal is given to students throughout the programme. Feedback may be verbal, given during tutorials or lab exercises, where both student and lecturer can identify problems and steps can be taken to improve future work. Feedback is presented as part of a continuous assessment plan, such as the development of a portfolio; this may be verbal or written feedback, or it may be formal written feedback, as in the case of assignment marking with comments.

It should be noted that much of the feedback, not only identifies problems along with suitable guidance, but also highlights the student's achievements. This approach usually works better than simply "must try harder."

In some cases, 'progressive feedback' is the most suitable approach, particularly when there are many problems with an individual student's work. i.e., do not try to mend everything all at once, as this can lead to the student becoming demoralised, but rather work on the most important aspects first, whilst introducing other improvements later.

## **Quality Management**

All provision is expected to comply with the University processes for quality assurance, the QAA Quality Code and any specific PSRB requirements to ensure the quality of the learning and teaching on the programme. The University uses the following mechanisms to help evaluate, enhance and review programmes delivery:

- Student Evaluation of Module Questionnaire
- Student Voice Forum
- Individual student feedback
- Student representatives
- Continuous Programme Monitoring and Enhancement reports
- Periodic review and re-validation process
- Internal Moderation and External Examining
- External Examiner Annual Reports



- PSRB requirements and accreditation activities
- National Student Survey (NSS)

## Support for Students

The University has a range of departments that offer support for students such as:

- Library & IT Resources
- Inclusion Services
- Careers Service
- Chaplaincy
- Counselling & Wellbeing
- Student Funding and Welfare
- Student Administration

Please access the University's website at <u>www.wrexham.ac.uk</u> to find out more about the Departments.

The Student Union offers support for students, please access their website at to find out more. <u>https://www.wrexhamglyndwrsu.org.uk/</u>

All students at Wrexham University are allocated a Personal Tutor whose main responsibility is to act as the first point of contact for their personal students and to provide pastoral and academic support throughout their studies at the University.

## **Equality and Diversity**

Wrexham University is committed to providing access to all students and promotes equal opportunities in compliance with the Equality Act 2010 legislation. This programme complies fully with the University's Equality and Diversity Policy, ensuring that everyone who has the potential to achieve in higher education is given the chance to do so. Please click on the following link for more information about <u>equality and diversity</u>

