OFFICE USE ONLY	
Date of validation event:	26 April 2018
Date of approval by Academic Board:	28 November 2018
Approved Validation Period:	*5 years from September 2019*
Date and type of revision:	*APSC approved standard part-time delivery routes 29/4/19.* *19/06/19 Administrative correction only to Module title COM736*

PART TWO PROGRAMME SPECIFICATON

MSc Computer Science
MSc Computing
MSc Computer Networking
MSc Cyber Security

1	**Awarding body**
	Glyndŵr University
2	**Programme delivered by**
	Glyndŵr University
3	**Location of delivery**
	Plas Coch Campus, Wrexham
4	**Faculty / Department**
	Faculty of Arts, Science and Technology / Computing
5	**Exit awards available**
	Pg Dip Computer Science Pg Dip Computing Pg Dip Computer Networking Pg Dip Cyber Security Pg Cert Computing
6	**Professional, Statutory or Regulatory Body (PSRB) accreditation**
	The programme has been designed to align with the requirements of the British Computer Society (BCS) and accreditation will be requested post approval. **The information above is correct at the point of programme validation, refer to university PSRB register and university website for current details of programme accreditation.**
7	**Accreditation available**
	See above.
8	**Please add details of any conditions that may affect accreditation (e.g. is it dependent on choices made by a student?)**
	Students must have studied all years at the Wrexham Glyndŵr University campus.
9	JACS3 **code**
	MSc Computer Science: I100

MSc Computing: I100
MSc Computer Networking: I120
MSc Cyber Security: I190

10	UCAS **code**

N/A

11	**Relevant QAA subject benchmark statement/s**

Computing (2016)
Master's degrees in computing (2011)
Master's degree characteristics (2015)

12	**Other external and internal reference points used to inform the programme outcomes**

BCS: Additional requirements for CITP
BCS: Additional requirements for CEng/CSci

13	**Mode of study**

Full & part time

14	**Normal length of study**

Full-time: 1 year
Part-time: 2 years

16	**Language of study**

English

17 Criteria for admission to the programme

Standard entry criteria

Entry requirements are in accordance with the University's admissions policy
https://www.glyndwr.ac.uk/en/media/FINAL%20ADMISSIONS%20POLICY%202020
17.pdf

The University's entry requirements are set out at
http://www.glyndwr.ac.uk/en/Undergraduatecourses/UCAStariffchange2017/

International entry qualifications are outlined on the National Academic
Recognition and Information Centre (NARIC) as equivalent to the relevant UK
entry qualification.

In addition to the academic entry requirements, all applicants whose first language
is not English or Welsh must demonstrate English language proficiency.

European students are able to provide this evidence in a number of ways (please
see http://www.glyndwr.ac.uk/en/Europeanstudents/entryrequirements/ for
details), including IELTS.

International students require a UKVI Approved Secure English Language Test
(SELT) (please see
http://www.glyndwr.ac.uk/en/Internationalstudents/EntryandEnglishLanguageRequ
irements/ for details).

DBS Requirements

N/A

Non-standard entry criteria and programme specific requirements

N/A

18 Recognition of Prior (Experiential) Learning

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. Any programme specific restrictions are outlined below

Programme specific restrictions

N/A

19 Aims of the programme

These programmes aim to provide a platform for more advanced studies, acquisition of higher-level skills and knowledge, increased employability, and professionalism. The intention of our master's level suite of programmes is to build upon the experiences and achievements of our students and take them to the next level of personal development.

The suite of programmes has overarching aims, which will provide students with:
- A deepened and specialist knowledge in a specific field of computing;
- Higher-level technical and professional skills;
- Awareness of emerging trends and technologies in their specialist field;
- The ability to critically appraise and disseminate research results;
- A sound basis for further research and/or professional development.

At programme specific level, the additional aims are:

MSc Computer Science
- To provide specialist, advanced technical skills in the areas of networking, web and mobile development and software development.

MSc Computing
- To provide a rapid introduction to the field of computing at master's level for students who have had limited experience in the subject discipline, producing competent and energised graduates.

MSc Computer Networking
- To provide a systematic understanding and critical awareness of network structure and data communications principles, current technologies, existing and emerging technological difficulties and new technological insights.

MSc Cyber Security
- To provide a deep and specialist set of knowledge and high-level practical abilities in the field of cyber security, incorporating techniques for the development and analysis of secure systems and technology platforms.

20 Distinctive features of the programme

MSc Computer Science
The MSc in Computer Science focuses on the practical science of computer programming with a commercial slant, the development of applications for up to date mobile devices as well as the concepts in data communications. In addition, the programme seeks to develop advanced software development and programming skills and expertise, making graduates ready for challenging and high-paced software development employment. Although the necessary background is introduced as appropriate, the course deals with problem solving and the provisioning of real computer based services and applications using current and emerging technologies. In addition to developing an understanding of underlying principles, students are engaged in the practical application of programme design, modern web technologies, network design, implementation, trouble-shooting and management for real- world problems. The practicalities of troubleshooting applications are embedded deeply within the programme.

MSc Computing
This programme is primarily designed to provide an opportunity for postgraduate study for those whose first degree is not in computing or for those whose degree in Computing was awarded some years ago. Graduates with some previous industrial experience in the computer field can also broaden their horizons through this MSc programme, by gaining a sound knowledge of the theoretical basis and practical applications of computing. Students exiting the programme are equipped with knowledge of theoretical, academic, evaluative, and vocational expertise. Students will develop their critical thinking skills and their ability to have the foresight to deal with the increasingly challenging and changing nature of the field. The programme is designed to provide the skills to meet industrial and commercial needs, and enable students to practice as computing and IT professionals.

MSc Computer Networking
The MSc in Computer Networking focuses on practical networking rather than abstract concepts in data communications. Although the necessary background is introduced as appropriate, the course on the whole deals with problem solving and the provisioning of real network services using current and emergent network hardware and protocols along with the development of applications to exploit these technologies. In addition to developing an understanding of underlying principles, students are engaged in the practical application of network design, implementation, trouble-shooting and management for real-world problems. The practicalities of network troubleshooting are embedded deeply. At all stages of the programme, appropriate reflection on their progress and development will be a requirement of progress. For their dissertations/theses, students will be expected to investigate cutting-edge technologies, implement and test novel networking solutions or develop or analyse original network applications.

MSc Cyber Security
The MSc Cyber Security is designed to build upon substantial knowledge that has already been gained at undergraduate level, or from more recent industry work, in the field of computer security, cyber security, network security, and related fields. This programme focuses upon several specialist disciplines, which are technical in nature, particularly around the areas of developing secure software platforms and protecting against complex attack processes used to breach system security and create deficits in normal functionality. The programme also integrates professional level skills that relate to the audit and management or institutional and organizational risk relating to cyber security and data protection regulations. This is achieved via a

mixture of interactive theory work as well as deep technical and practical teaching and exercises.

In terms of all of the MSc programmes on offer, it is anticipated that graduates will go into careers in the computing and technology fields of their chosen award specialism or to continue their academic study at doctoral (MPhil/PhD) level, and industrial research positions, as well as new roles that are likely to emerge in the industry.

21 Programme structure narrative

All of the MSc programmes included in this suite feature a core backbone of modules, making up 100 credits of the 180 credit programme. This core consists of Postgraduate Study and Research Methods, Technological Horizon-Scanning, and Dissertation.

The programme consists of two parts: part one, which consists of the 120 credits of taught modules; and part two, which is the 60 credit Dissertation. The Dissertation pursued will complement the prior taught modules by focussing upon a theme or topic from the relevant computing discipline.

The module diet of each programme provides a vehicle for these aims and intentions to be met and will equip students with a mixture of theoretical and practical abilities that will allow them to enhance their current skillset in this emerging field. In addition to the specialist content, students will develop transferable skills in working consistently at a professional level and in handling, and responding to, complex, large-scale, information, focused upon current research and industry developments in computing.

The programme is offered in full-time and part-time modes of attendance. Students will typically be expected to attend the University for two or three days a week, full-time, and for one or two days a week, when studying part-time, in addition to studying in their own time.

22 Programme structure diagram

MSc Computer Science (Full-time)

Level 7						
Semester 1	Mod title	Postgraduate Study and Research Methods	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
	Mod code/ 'New' Module	COM742	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Vic Grout	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Semester 2	Mod title	Internet and Mobile App Development	Mod title	Software Development - Object Oriented Programming	Mod title	Technological Horizon-Scanning
	Mod code/ 'New' Module	COM708	Mod code/ 'New' Module	COM701	Mod code/ 'New' Module	COM745
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Jason Matthews	Mod leader	Rich Picking	Mod leader	Vic Grout

Semester 3	Mod title	Dissertation
	Mod code/ 'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Computing (Full-time)

Level 7						
Semester 1	Mod title	Postgraduate Study and Research Methods	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
	Mod code/ 'New' Module	COM742	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Vic Grout	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Semester 2	Mod title	Database Systems and Data Analytics	Mod title	Software Development - Object Oriented Programming	Mod title	Technological Horizon-Scanning
	Mod code/ 'New' Module	COM736	Mod code/ 'New' Module	COM701	Mod code/ 'New' Module	COM745
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Bindu Jose	Mod leader	Rich Picking	Mod leader	Vic Grout

Semester 3	Mod title	Dissertation
	Mod code/ 'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Computer Networking (Full-time)

	Level 7					
Semester 1	Mod title	Postgraduate Study and Research Methods	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
	Mod code/ 'New' Module	COM742	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Vic Grout	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Semester 2	Mod title	Remote Access & Security	Mod title	Network Protocols & Algorithms	Remote Access & Security	Technological Horizon-Scanning
	Mod code/ 'New' Module	COM743	Mod code/ 'New' Module	COM740	Mod code/ 'New' Module	COM745
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden	Mod leader	Vic Grout

Semester 3	Mod title	Dissertation
	Mod code/ 'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Cyber Security (Full-time)

Level 7						
Semester 1	Mod title	Postgraduate Study and Research Methods	Mod title	Advanced Ethical Hacking	Mod title	Security and Risk Management
	Mod code/ 'New' Module	COM742	Mod code/ 'New' Module	COM733	Mod code/ 'New' Module	COM744
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Vic Grout	Mod leader	Nigel Houlden	Mod leader	Denise Oram

Semester 2	Mod title	Developing Secure Software	Mod title	Applied Cryptography	Remote Access & Security	Technological Horizon-Scanning
	Mod code/ 'New' Module	COM737	Mod code/ 'New' Module	COM735	Mod code/ 'New' Module	COM745
	Credit value	20	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Vic Grout	Mod leader	Vic Grout

Semester 3	Mod title	Dissertation
	Mod code/ 'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Computer Science (Part-time)

Year 1

<table>
<tr><td rowspan="5">Trimester 1</td><td>Mod title</td><td>Network Hardware and Software</td><td>Mod title</td><td>Network Techniques & Technologies</td></tr>
<tr><td>Mod code/ 'New' Module</td><td>COM739</td><td>Mod code/ 'New' Module</td><td>COM741</td></tr>
<tr><td>Credit value</td><td>20</td><td>Credit value</td><td>20</td></tr>
<tr><td>Core/Option</td><td>Core</td><td>Core/Option</td><td>Core</td></tr>
<tr><td>Mod leader</td><td>Nigel Houlden</td><td>Mod leader</td><td>Nigel Houlden</td></tr>
</table>

<table>
<tr><td rowspan="5">Trimester 2</td><td>Mod title</td><td>Internet and Mobile App Development</td><td>Mod title</td><td>Software Development - Object Oriented Programming</td></tr>
<tr><td>Mod code/ 'New' Module</td><td>COM708</td><td>Mod code/ 'New' Module</td><td>COM701</td></tr>
<tr><td>Credit value</td><td>20</td><td>Credit value</td><td>20</td></tr>
<tr><td>Core/Option</td><td>Core</td><td>Core/Option</td><td>Core</td></tr>
<tr><td>Mod leader</td><td>Jason Matthews</td><td>Mod leader</td><td>Rich Picking</td></tr>
</table>

Year 2

<table>
<tr><td></td><td colspan="2">Level 7</td></tr>
<tr><td rowspan="5">Trimester 1</td><td>Mod title</td><td>Postgraduate Study and Research Methods</td></tr>
<tr><td>Mod code/'New' Module</td><td>COM742</td></tr>
<tr><td>Credit value</td><td>20</td></tr>
<tr><td>Core/Option</td><td>Core</td></tr>
<tr><td>Mod leader</td><td>Vic Grout</td></tr>
</table>

<table>
<tr><td rowspan="5">Trimester 2</td><td>Mod title</td><td>Technological Horizon-Scanning</td></tr>
<tr><td>Mod code/'New' Module</td><td>COM745</td></tr>
<tr><td>Credit value</td><td>20</td></tr>
<tr><td>Core/Option</td><td>Core</td></tr>
<tr><td>Mod leader</td><td>Vic Grout</td></tr>
</table>

<table>
<tr><td rowspan="5">Trimester 3</td><td>Mod title</td><td>Dissertation</td></tr>
<tr><td>Mod code/'New' Module</td><td>COM738</td></tr>
<tr><td>Credit value</td><td>60</td></tr>
<tr><td>Core/Option</td><td>Core</td></tr>
<tr><td>Mod leader</td><td>Rich Picking</td></tr>
</table>

MSc Computer Science (Part-time - specific cohorts only)

Year 1

Level 7		
Semester 1	Mod title	Postgraduate Study and Research Methods
	Mod code/'New' Module	COM742
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Semester 2	Mod title	Internet and Mobile App Development	Mod title	Software Development - Object Oriented Programming
	Mod code/ 'New' Module	COM708	Mod code/ 'New' Module	COM701
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Jason Matthews	Mod leader	Rich Picking

Semester 3	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Year 2

Semester 2	Mod title	Technological Horizon-Scanning
	Mod code/'New' Module	COM745
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Semester 3	Mod title	Dissertation
	Mod code/ 'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Computing (Part-time)

Year 1

Trimester 1				
	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Trimester 2				
	Mod title	Database Systems and Data Analytics	Mod title	Software Development - Object Oriented Programming
	Mod code/ 'New' Module	COM736	Mod code/ 'New' Module	COM701
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Bindu Jose	Mod leader	Rich Picking

Year 2

Level 7		
Trimester 1	Mod title	Postgraduate Study and Research Methods
	Mod code/'New' Module	COM742
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Trimester 2		
	Mod title	Technological Horizon-Scanning
	Mod code/'New' Module	COM745
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Trimester 3		
	Mod title	Dissertation
	Mod code/'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Computing (Part-time specific cohorts only)

Year 1

	Level 7	
Semester 1	Mod title	Postgraduate Study and Research Methods
	Mod code/'New' Module	COM742
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

	Mod title	Database Systems and Data Analytics	Mod title	Software Development - Object Oriented Programming
Semester 2	Mod code/ 'New' Module	COM736	Mod code/ 'New' Module	COM701
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Bindu Jose	Mod leader	Rich Picking

	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
Semester 3	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Year 2

Semester 2	Mod title	Technological Horizon-Scanning
	Mod code/'New' Module	COM745
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Semester 3	Mod title	Dissertation
	Mod code/ 'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Computer Networking (Part-time)

Year 1

Level 7				
Trimester 1	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Trimester 2	Mod title	Remote Access and Security	Mod title	Network Protocols and Algorithms
	Mod code/ 'New' Module	COM743	Mod code/ 'New' Module	COM740
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Year 2

Trimester 1	Mod title	Postgraduate Study and Research Methods
	Mod code/'New' Module	COM742
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Trimester 2	Mod title	Technological Horizon-Scanning
	Mod code/'New' Module	COM745
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Summer period	Mod title	Dissertation
	Mod code/'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Computer Networking (Part-time - specific cohorts only))

Year 1

	Level 7			
Semester 1	Mod title	Network Hardware and Software	Mod title	Network Techniques & Technologies
	Mod code/ 'New' Module	COM739	Mod code/ 'New' Module	COM741
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Semester 2	Mod title	Remote Access and Security	Mod title	Network Protocols and Algorithms
	Mod code/ 'New' Module	COM743	Mod code/ 'New' Module	COM740
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Nigel Houlden

Semester 3	Mod title	Postgraduate Study and Research Methods
	Mod code/'New' Module	COM742
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Year 2

Semester 2	Mod title	Technological Horizon-Scanning
	Mod code/'New' Module	COM745
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Summer period	Mod title	Dissertation
	Mod code/'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Cyber Security (Part-time)

Year 1

Trimester 3	Mod title	Advanced Ethical Hacking	Mod title	Security and Risk Management
	Mod code/ 'New' Module	COM733	Mod code/ 'New' Module	COM744
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Denise Oram

Trimester 2	Mod title	Developing Secure Software	Mod title	Applied Cryptography
	Mod code/ 'New' Module	COM737	Mod code/ 'New' Module	COM735
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Vic Grout

Year 2

	Level 7	
Trimester 1	Mod title	Postgraduate Study and Research Methods
	Mod code/'New' Module	COM742
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Trimester 2	Mod title	Technological Horizon-Scanning
	Mod code/'New' Module	COM745
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Trimester 3	Mod title	Dissertation
	Mod code/'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

MSc Cyber Security (Part-time - specific cohorts only)

Year 1

Level 7		
Semester 1	Mod title	Postgraduate Study and Research Methods
	Mod code/'New' Module	COM742
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Semester 2	Mod title	Developing Secure Software	Mod title	Applied Cryptography
	Mod code/ 'New' Module	COM737	Mod code/ 'New' Module	COM735
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Vic Grout

Semester 3	Mod title	Advanced Ethical Hacking	Mod title	Security and Risk Management
	Mod code/ 'New' Module	COM733	Mod code/ 'New' Module	COM744
	Credit value	20	Credit value	20
	Core/Option	Core	Core/Option	Core
	Mod leader	Nigel Houlden	Mod leader	Denise Oram

Year 2

Semester 2	Mod title	Technological Horizon-Scanning
	Mod code/'New' Module	COM745
	Credit value	20
	Core/Option	Core
	Mod leader	Vic Grout

Semester 3	Mod title	Dissertation
	Mod code/ 'New' Module	COM738
	Credit value	60
	Core/Option	Core
	Mod leader	Rich Picking

23 Intended learning outcomes of the programme

MSc Computer Science

Postgraduate	
Knowledge and understanding	
	Level 7
A1	*Make professional judgements in the selection of technologies or processes for complex and dynamic scenarios*
A2	*Give a critical account of current and emerging developments in computer science*
A3	*Evidence deep comprehension of specialist applications for computer science and recognise the boundaries of knowledge in this domain*
A4	*Appraise computer network configurations and evaluate their application scenarios*
A5	*Compare and contrast software development tools and techniques for a variety of practical situations*
A6	*Demonstrate a sufficiently detailed knowledge of research methods appropriate specifically to their advanced independent-study dissertation/project, together with detailed knowledge of the particular area in which the project is carried out*

	Intellectual skills
	Level 7
B1	*Carry out confident and accurate selection and application of principles and procedures appropriate to the resolution of a range of situations and professional problems associated within the specialist area of computer science*
B2	*Identify and classify principles, ideas in contemporary information sources, and situations to professional standards; analyse rigorously, effectively, critically and creatively; cope with complexity*
B3	*Synthesise and predict the future development of current and emerging technologies in the field of computer science, being mindful of external factors*
B4	*Design and synthesise software and hardware systems in response to a range of technological and practical constraints*
B5	*Utilise complex, often contradictory, resources and demonstrate how to access these to obtain state-of-the-art knowledge of computer science*
B6	*Evaluate methods, and plan for, a complex, self-led, investigation in response to a recognised problem or gap in knowledge*

	Subject skills
	Level 7
C1	*Work with a range of computer hardware and networked devices to implement complete and functional systems or platforms*
C2	*Be effective in the acquisition and analysis of data, from a range of sources*
C3	*Make effective use of a range of theories and techniques applicable to computer science scenarios*
C4	*Assimilate and integrate emerging developments in computer science into their own work*

	Subject skills
	Level 7
C5	*Undertake a significant computer science related thesis which involves an analytical, rigorous and critical approach to problem identification, solution and evaluation*
C6	*Synthesise the knowledge, skills and theories from the computing areas covered by the programme in order to solve a complex problem that may require the integration of different computer science techniques and / or technologies*

	Practical, professional and employability skills
	Level 7
D1	*Display a mastery of working with a range of information sources and be able to objectively arrange these in a holistic manner*
D2	*Professionally and efficiently operate a range of IT software, specialist computing applications, and configure a range of hardware devices*
D3	Effectively and proficiently work with stakeholders in designing IT and computer systems in response to their needs and demands
D4	*Make critical decisions regarding technology adoption and success, based upon technological, societal, ethical, and market information*
D5	*Conduct and control a piece of research or investigation and professionally present the outcomes in a succinct and reflexive manner*
D6	*Carry out a large-scale, independent project and provide detailed and reflective analysis of its efficacy and value*

MSc Computing

Postgraduate	
Knowledge and understanding	
	Level 7
A1	*Make professional judgements in the selection of technologies or processes for complex and dynamic scenarios*
A2	*Give a critical account of current and emerging developments in computing*
A3	*Evidence deep comprehension of specialist applications for computing and recognise the boundaries of knowledge in this domain*
A4	*Appraise computer network configurations and evaluate their application scenarios*
A5	*Select and design tools for solving real-world problems that require the integration of large data sets and analytics*
A6	*Demonstrate a sufficiently detailed knowledge of research methods appropriate specifically to their advanced independent-study dissertation/project, together with detailed knowledge of the particular area in which the project is carried out*

	Intellectual skills
	Level 7
B1	*Carry out confident and accurate selection and application of principles and procedures appropriate to the resolution of a range of situations and professional problems associated within the specialist area of computing*
B2	*Identify and classify principles, ideas in contemporary information sources, and situations to professional standards; analyse rigorously, effectively, critically and creatively; cope with complexity*
B3	*Synthesise and predict the future development of current and emerging technologies in the field of computing, being mindful of external factors*
B4	*Design and synthesise software and hardware systems in response to a range of technological and practical constraints*
B5	*Utilise complex, often contradictory, resources and demonstrate how to access these to obtain state-of-the-art knowledge of computing*
B6	*Evaluate methods, and plan for, a complex, self-led, investigation in response to a recognised problem or gap in knowledge*

	Subject skills
	Level 7
C1	*Work with a range of computer hardware and networked devices to implement complete and functional systems or platforms*
C2	*Be effective in the acquisition and analysis of data, from a range of sources*
C3	*Make effective use of a range of theories and techniques applicable to computing scenarios*
C4	*Assimilate and integrate emerging developments in computing into their own work*
C5	*Undertake a significant computing related thesis which involves an analytical, rigorous and critical approach to problem identification, solution and evaluation*
C6	*Synthesise the knowledge, skills and theories from the computing areas covered by the programme in order to solve a complex problem that may require the integration of different computing techniques and / or technologies*

	Practical, professional and employability skills
	Level 7
D1	*Display a mastery of working with a range of information sources and be able to objectively arrange these in a holistic manner*
D2	*Professionally and efficiently operate a range of IT software, specialist computing applications, and configure a range of hardware devices*
D3	Effectively and proficiently work with stakeholders in designing IT and computer systems in response to their needs and demands
D4	*Make critical decisions regarding technology adoption and success, based upon technological, societal, ethical, and market information*
D5	*Conduct and control a piece of research or investigation and professionally present the outcomes in a succinct and reflexive manner*
D6	*Carry out a large-scale, independent project and provide detailed and reflective analysis of its efficacy and value*

MSc Computer Networking

Postgraduate	
Knowledge and understanding	
	Level 7
A1	*Make professional judgements in the selection of technologies or processes for complex and dynamic scenarios*
A2	*Give a critical account of current and emerging developments in computer networking*
A3	*Evidence deep comprehension of specialist applications for computer networking and recognise the boundaries of knowledge in this domain*
A4	*Appraise computer network configurations and evaluate their application scenarios*
A5	*Compare and contrast the theories and models of network protocols, algorithms and remote access principles*
A6	*Demonstrate a sufficiently detailed knowledge of research methods appropriate specifically to their advanced independent-study dissertation/project, together with detailed knowledge of the particular area in which the project is carried out*

	Intellectual skills
	Level 7
B1	*Carry out confident and accurate selection and application of principles and procedures appropriate to the resolution of a range of situations and professional problems associated within the specialist area of computer networking*
B2	*Identify and classify principles, ideas in contemporary information sources, and situations to professional standards; analyse rigorously, effectively, critically and creatively; cope with complexity*
B3	*Synthesise and predict the future development of current and emerging technologies in the field of computer networking, being mindful of external factors*
B4	*Design and synthesise computer networks and infrastructures in response to a range of technological and practical constraints*
B5	*Utilise complex, often contradictory, resources and demonstrate how to access these to obtain state-of-the-art knowledge of computer networking*
B6	*Evaluate methods, and plan for, a complex, self-led, investigation in response to a recognised problem or gap in knowledge*

	Subject skills
	Level 7
C1	*Work with a range of computer hardware and networked devices to implement complete and functional systems or platforms*
C2	*Be effective in the acquisition and analysis of data, from a range of sources*
C3	*Make effective use of a range of theories and techniques applicable to computer networking scenarios*
C4	*Assimilate and integrate emerging developments in computer networking into their own work*
C5	*Undertake a significant computer networking related thesis which involves an analytical, rigorous and critical approach to problem identification, solution and evaluation*

	Subject skills
	Level 7
C6	*Synthesise the knowledge, skills and theories from the computing areas covered by the programme in order to solve a complex problem that may require the integration of different computer networking techniques and / or technologies*

	Practical, professional and employability skills
	Level 7
D1	*Display a mastery of working with a range of information sources and be able to objectively arrange these in a holistic manner*
D2	*Professionally and efficiently operate a range of IT software, specialist computing applications, and configure a range of hardware devices*
D3	Effectively and proficiently work with stakeholders in designing IT and computer systems in response to their needs and demands
D4	*Make critical decisions regarding technology adoption and success, based upon technological, societal, ethical, and market information*
D5	*Conduct and control a piece of research or investigation and professionally present the outcomes in a succinct and reflexive manner*
D6	*Carry out a large-scale, independent project and provide detailed and reflective analysis of its efficacy and value*

MSc Cyber Security

Postgraduate	
Knowledge and understanding	
	Level 7
A1	*Make professional judgements in the selection of technologies or processes for complex and dynamic scenarios*
A2	*Give a critical account of current and emerging developments in cyber security*
A3	*Evidence deep comprehension of specialist applications for cyber security and recognise the boundaries of knowledge in this domain*
A4	*Relate the theories and paradigms of security, risk and information management to the backdrop of a range of cyber attacks and penetration methods*
A5	*Evaluate the principles and approaches for secure software development in a constantly developing landscape of cyber attacks*
A6	*Demonstrate a sufficiently detailed knowledge of research methods appropriate specifically to their advanced independent-study dissertation/project, together with detailed knowledge of the particular area in which the project is carried out*

	Intellectual skills
	Level 7
B1	*Carry out confident and accurate selection and application of principles and procedures appropriate to the resolution of a range of situations and professional problems associated within the specialist area of cyber security*
B2	*Identify and classify principles, ideas in contemporary information sources, and situations to professional standards; analyse rigorously, effectively, critically and creatively; cope with complexity*
B3	*Synthesise and predict the future development of current and emerging technologies in the field of cyber security, being mindful of external factors*
B4	*Formulate a range of strategies and advanced techniques for secure and auditable information and data storage in contemporary situations*
B5	*Utilise complex, often contradictory, resources and demonstrate how to access these to obtain state-of-the-art knowledge of cyber security*
B6	*Evaluate methods, and plan for, a complex, self-led, investigation in response to a recognised problem or gap in knowledge*

	Subject skills
	Level 7
C1	*Work with a range of cyber security technologies and devices to implement complete and functional systems or platforms*
C2	*Be effective in the acquisition and analysis of data, from a range of sources*
C3	*Make effective use of a range of theories and techniques applicable to cyber security scenarios*
C4	*Assimilate and integrate emerging developments in cyber security into their own work*
C5	*Undertake a significant cyber security related thesis which involves an analytical, rigorous and critical approach to problem identification, solution and evaluation*

	Subject skills		
	Level 7		
C6	Synthesise the knowledge, skills and theories from the computing areas covered by the programme in order to solve a complex problem that may require the integration of different cyber security techniques and / or technologies		

	Practical, professional and employability skills
	Level 7
D1	Display a mastery of working with a range of information sources and be able to objectively arrange these in a holistic manner
D2	Professionally and efficiently operate a range of IT software, specialist computing applications, and configure a range of hardware devices
D3	Effectively and proficiently work with stakeholders in designing IT and computer systems in response to their needs and demands
D4	Make critical decisions regarding technology adoption and success, based upon technological, societal, ethical, and market information
D5	Conduct and control a piece of research or investigation and professionally present the outcomes in a succinct and reflexive manner
D6	Carry out a large-scale, independent project and provide detailed and reflective analysis of its efficacy and value

24 Curriculum matrix

MSc Computer Science

	Module Title	Core or option?	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6
PgC	Postgraduate Study and Research Methods	Core	□	□	■	□	□	□	□	■	□	□	■	■
	Network Hardware and Software	Core	■	□	□	■	□	□	■	□	□	■	□	□
	Network Techniques & Technologies	Core	■	□	□	■	□	□	■	□	□	■	□	□
PgD	Software Development - Object Oriented Programming	Core	■	□	□	□	■	□	■	□	□	■	□	□
	Internet and Mobile App Development	Core	■	□	□	□	■	□	■	□	□	■	□	□
	Technological Horizon-Scanning	Core	□	■	■	□	□	□	□	□	■	□	■	□
MSc	Dissertation	Core	■	■	■	□	□	■	■	■	□	□	■	■

	Module Title	Core or option?	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6
PgC	Postgraduate Study and Research Methods	Core	□	■	■	□	□	□	■	□	□	□	■	□
	Network Hardware and Software	Core	□	□	■	□	□	□	□	■	■	□	□	□
	Network Techniques & Technologies	Core	■	□	■	□	□	□	□	■	□	□	□	□
PgD	Software Development - Object Oriented Programming	Core	□	□	■	□	□	□	□	■	□	□	□	□
	Internet and Mobile App Development	Core	□	□	■	□	□	□	□	■	■	□	□	□
	Technological Horizon-Scanning	Core	□	□	□	■	□	□	■	□	□	■	□	□
MSc	Dissertation	Core	□	■	■	■	■	■	■	■	■	■	■	■

MSc Computing

	Module Title	Core or option?	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6
PgC	Postgraduate Study and Research Methods	Core	□	□	■	□	□	□	□	■	□	□	■	■
	Network Hardware and Software	Core	□	□	□	■	□	□	■	□	□	■	□	□
	Network Techniques & Technologies	Core	■	□	□	■	□	□	■	□	□	■	□	□
PgD	Software Development - Object Oriented Programming	Core	■	□	□	□	■	□	■	□	□	■	□	□
	Database Systems and Data Analytics	Core	■	□	□	□	□	□	■	■	□	■	□	□
	Technological Horizon-Scanning	Core	□	■	■	□	□	□	□	□	■	□	■	□
MSc	Dissertation	Core	■	■	■	□	□	■	■	■	□	□	■	■
	Module Title	Core or option?	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6
PgC	Postgraduate Study and Research Methods	Core	□	■	■	□	□	□	■	□	□	□	■	□
	Network Hardware and Software	Core	■	□	■	□	□	□	□	■	■	□	□	□
	Network Techniques & Technologies	Core	■	□	■	□	□	□	□	■	□	□	□	□
PgD	Software Development - Object Oriented Programming	Core	□	□	■	□	□	□	□	■	□	□	□	□
	Database Systems and Data Analytics	Core	□	■	■	□	□	□	□	■	□	□	□	□
	Technological Horizon-Scanning	Core	□	□	□	■	□	□	■	□	□	■	□	□
MSc	Dissertation	Core	□	■	■	■	■	■	■	■	■	■	■	■

MSc Computer Networking

	Module Title	Core or option?	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6
PgC	Postgraduate Study and Research Methods	Core	□	□	■	□	□	□	□	■	□	□	■	■
	Network Hardware and Software	Core	□	□	□	■	□	□	■	□	□	■	□	□
	Network Techniques & Technologies	Core	■	□	□	■	□	□	■	□	□	■	□	□
PgD	Remote Access and Security	Core	■	□	■	■	■	□	■	□	□	■	□	□
	Network Protocols and Algorithms	Core	■	□	■	■	■	□	■	□	□	■	□	□
	Technological Horizon-Scanning	Core	□	■	■	□	□	□	□	□	■	□	■	□
MSc	Dissertation	Core	■	■	■	□	□	■	■	■	□	□	■	■

	Module Title	Core or option?	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6
PgC	Postgraduate Study and Research Methods	Core	□	■	■	□	□	□	■	□	□	□	■	□
	Network Hardware and Software	Core	■	□	■	□	□	□	□	■	■	□	□	□
	Network Techniques & Technologies	Core	■	□	■	□	□	□	□	■	□	□	□	□
PgD	Remote Access and Security	Core	■	□	■	□	□	□	□	■	□	□	□	□
	Network Protocols and Algorithms	Core	■	□	■	□	□	□	□	■	□	□	□	□
	Technological Horizon-Scanning	Core	□	□	□	■	□	□	■	□	□	■	□	□
MSc	Dissertation	Core	□	■	■	■	■	■	■	■	■	■	■	■

MSc Cyber Security

	Module Title	Core or option?	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6
PgC	Postgraduate Study and Research Methods	Core	□	□	■	□	□	□	□	■	□	□	■	■
PgC	Advanced Ethical Hacking	Core	■	□	□	■	□	□	■	□	□	□	□	□
PgC	Security and Risk Management	Core	■	■	□	■	□	□	■	□	□	■	□	□
PgD	Applied Cryptography	Core	■	□	□	■	■	□	■	□	□	□	□	□
PgD	Developing Secure Software	Core	□	□	□	■	■	□	■	□	□	■	□	□
PgD	Technological Horizon-Scanning	Core	□	■	■	□	□	□	□	□	■	□	■	□
MSc	Dissertation	Core	■	■	■	□	□	■	■	■	□	□	■	■

	Module Title	Core or option?	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6
PgC	Postgraduate Study and Research Methods	Core	□	■	□	□	□	□	■	□	□	□	■	□
PgC	Advanced Ethical Hacking	Core	■	□	■	□	□	□	□	■	□	□	□	□
PgC	Security and Risk Management	Core	□	■	■	□	□	□	□	□	■	□	□	□
PgD	Applied Cryptography	Core	□	□	■	□	□	□	□	■	□	□	□	□
PgD	Developing Secure Software	Core	■	□	■	□	□	□	□	■	■	□	□	□
PgD	Technological Horizon-Scanning	Core	□	□	□	■	□	□	■	□	□	■	□	□
MSc	Dissertation	Core	□	■	■	■	■	■	■	■	■	■	■	■

25 Learning and teaching strategy

The programme is informed and guided by the Computing Learning, Teaching and Assessment strategy. It seeks to assist the student to become an independent learner, delivering subject skills alongside the embedding of skills for employment. The curriculum is designed to encourage an appreciation for learning. Learning is enriched by appropriate underpinnings, current research, industrial applications and the development of transferable skills.

The majority of scheduled learning and teaching activities is through attendance at lectures, guest talks, tutorials, and labs. Attendance at external events and field trips are made available and as when they are appropriate and practicable. These modes of contact provide students with the ability to develop and practice the range of learning outcomes associated with the programme, ranging from the theoretical to the practical.

In the early stages of each module, problems will be well defined and limited in scope and scale. At later stages, problems will become less structured (to encourage reflection on problem issues) and open-ended (to give scope to propose and evaluate alternative solution strategies). Case studies are used when appropriate to integrate study topics and to underline vocational relevance. Coursework assignments are important throughout.

As the programme progresses, students are expected to demonstrate increasing proficiency in use of IT tools and techniques to support production of technical documentation, to enhance oral and written presentations, and to aid organisation of personal study material.

Part two of the programme is the Dissertation and is an area that has been given special consideration since it is such a significant piece of work undertaken by the student. While students study the taught part of the course they are given a 1 hour a week special lecture to inform them of the requirements of the Dissertation. This module is run so that it coincides with the end of the taught part of the course, which means that on completion of part one students can start immediately on producing the proposal for the dissertation. On submission of the proposal it is assessed and passed to an appropriate supervisor with expertise in the area that the student wishes to carry out the work. It is the supervisor's task to work with the student to improve the proposal to a level that is acceptable and achievable for a master's level within the time constraints. Students work independently on the dissertation having regular meetings with the supervisor. It is important that the student identifies at the proposal stage the various requirements needed to complete the dissertation e.g. equipment, software, space.

Extensive use is made of the University's Virtual Learning Environment (VLE), Moodle, to provide students with access to a range of delivery, and supporting, materials related to each of the modules featured on the programme. In addition to the materials used during the taught sessions, the VLE is used to provide students with additional content such as quizzes, videos, audio recordings, external links, technical reports, research papers, and so forth. The VLE also provides students with the ability to communicate using discussion forums and is the platform primarily used in the issuing, submission, marking, and feedback of student assessment.

26 Work based/placement learning statement

A work placement is not offered as part of these MSc programmes.

27 Welsh medium provision

The programmes will be delivered through the medium of English. Students are entitled to submit assessments in the medium of Welsh.

28 Assessment strategy

A range and diversity of assessment is provided on the programme as a way to allow students with multiple types of opportunity to demonstrate the skills and knowledge that they are developing over the duration of the programme and to help support inclusivity. This mixture often makes use of assessment methods where students must document a process or solution to a challenge, but also in the submission of artefacts, such as computer programs, databases, media assets, and practical network implementations.

Module code & title	Assessment type and weighting	Assessment loading	Indicative submission date
Postgraduate Study and Research Methods	*Coursework 40%* *Coursework 60%*	*1500 words* *2500 words*	*Sem1, Wk6* *Sem1, Wk12*
Network Hardware and Software	*In-class test 20%* *Practical 30%* *Coursework 50%*	*2.5 hrs* *2 hrs* *2000 words*	*Sem1, ongoing* *Sem1, ongoing* *Sem1, Wk12*
Network Techniques & Technologies	*In-class test 20%* *Practical 30%* *Coursework 50%*	*2.5 hrs* *2 hrs* *2000 words*	*Sem1, ongoing* *Sem1, ongoing* *Sem1, Wk12*
Internet and Mobile App Development	*Coursework 100%*		*Sem2, Wk12*
Software Development: Object-Oriented Programming	*Coursework 50%* *Coursework 50%*	*N/A* *N/A*	*Sem2, Wk6* *Sem2, Wk12*
Database Systems and Data Analytics	*Coursework 50%* *Coursework 50%*	*N/A* *3000 words*	*Sem2, Wk6* *Sem2, Wk12*
Remote Access & Security	*Case Study 100%*		*Sem2, ongoing*
Network Protocols & Algorithms	*In-class test 15%* *Practical 20%* *Coursework 65%*	*1.15 hrs* *2 hrs* *3000 words*	*Sem2, ongoing* *Sem2, ongoing* *Sem2, Wk12*
Advanced Ethical Hacking	*Coursework 60%* *Practical 40%*	*3000 words* *2 hrs*	*Sem1, Wk6* *Sem1, Wk12*
Security and Risk Management	*Case Study 70%* *In-class test 30%*	*4000 words* *1.5 hrs*	*Sem1, Wk6* *Sem1, Wk12*
Developing Secure Software	*Portfolio 70%* *In-class test 30%*	*4000 words* *1.5 hrs*	*Sem2, Wk6* *Sem2, Wk12*
Applied Cryptography	*Exam 50%* *Practical 50%*	*2 hrs* *3000 words*	*Sem2, Wk13-14* *Sem2, Wk10*
Technological Horizon-Scanning	*Presentation 40%* *Report 60%*	*30 minutes* *3500 words*	*Sem2, Wk6* *Sem2, Wk12*
Dissertation	*Research proposal 10%* *Dissertation 90%*	*2000 words* *15-20000 words* **OR** 17 page journal paper	*Sem3, Wk1* *Sem3, Wk12*

29 Assessment regulations

University regulations for Taught Masters Degrees apply.

Derogations

N/A

Non-credit bearing assessment

N/A

Restrictions for trailing modules (for taught masters programmes only)

None other than Postgraduate Study and Research Methods.

30 Programme Management

Programme leader

Nigel Houlden

Module Leaders

Nigel Houlden
Prof. Vic Grout
Mrs. Bindu Jose
Mrs. Denise Oram
Mr. Jason Matthews
Prof. Richard Picking

Link to Staff Profiles
https://www.glyndwr.ac.uk/en/StaffProfiles/VicGrout/
https://www.glyndwr.ac.uk/en/StaffProfiles/BinduJose/
https://www.glyndwr.ac.uk/en/StaffProfiles/DeniseOram/
https://www.glyndwr.ac.uk/en/StaffProfiles/JasonMatthews/
https://www.glyndwr.ac.uk/en/StaffProfiles/RichardPicking/

31 Quality Management

Programme Management
The designated Programme Leader who will be responsible for the day-to-day running of the programme, including the following:
- The management and development of curriculum and the course portfolio
- Student tracking and student records
- Collation of assessment data and presentation of data at assessment boards
- Management/co-ordination of overall assessment activities across the programme
- Liaison with external bodies and agencies
- Quality assurance and annual monitoring, including compilation of the Annual
- Monitoring Report
- Co-ordination of admissions activities and other recruitment activities, including relevant publicity activities

At module level there is devolved responsibility to Module Leaders for the following:

- The maintenance and development of teaching and learning materials for all students enrolled on the module
- The publishing and updating of module timetables, which shall include a weekly schedule of module sessions and required reading, to be distributed to students at the start of all modules
- The setting, marking and collation of marks for all module assessments and examination papers, including resit assessments, and submission of student results to the Programme Leader
- Tutorial support for students taking the module which they are responsible
- Quality monitoring, including processing of annual student feedback questionnaires and, where appropriate, feedback for individual modules
- Liaison with part-time members of staff involved in module teaching

Student Feedback

The University has procedures for the regular review of its educational provision, including the annual review of modules and programmes, which draw on feedback from such sources as external examiner reports, student evaluation, student achievement, and progression data. In addition, programmes are subject to a programme periodic review (PPR) and re-validation in year 5 that includes external input.

Feedback from students plays a critical part in informing the Faculty's strategic thinking. It also allows the Faculty to evaluate how its most important group of stakeholders, its students, views its service provision. Students can provide feedback in a number of ways, for instance:

Student Voice Forum (SVF): Chaired by a member of academic staff from outside the programme, will be held at least once per semester. The Chair will minute student feedback for action/response by the Programme Leader. Minutes of the SVFs and the response from the Programme Leader will be posted on the programme pages of Moodle. All programmes have representation at SVFs.

Student Evaluation of Modules (SEM): Module Leaders will distribute SEMs at the end of each module. A summary of the analysis of the SEMs, along with any other feedback (e.g. from the student suggestion box), will be passed to the Programme Leader for action/response.

Feedback on assessed work: Students submit work in a number of different ways depending on the module being studied. Wherever possible Moodle is used for electronic submission and Turnitin to check the similarity score and tutors give feedback via this interface within 3 working weeks. Practical work is developed and assessed by having students demonstrate their work, again immediate feedback is given. At the end of a module, overall feedback is provided along with a clear indication of what area the student needs, if necessary, to resubmit or what areas were good and which areas can be improved on.

32 Research and scholarship activity

Research within the programme team is co-ordinated at a Faculty level and, at a local level manifests itself through the Applied Research in Computing Laboratories (ARClab) group. ARClab's research encompasses the broader computing subject and is concentrated in the following areas:

- IoT, Networking and Cybersercurity

- Audio and Affective Computing
- Health and Assisted Living Technologies
- HCI, Augmented and Virtual Reality
- CAD/Engineering software
- MIS/Business
- Ethics/professionalism
- Robotics/AI

ARClab has taken over from the previous Computing research groups of Creative and Applied Research for the Digital Society (CARDS) and the Centre for Applied Internet Research (CAIR), which built up their activities very impressively over the past ten years. The commitment and enthusiasm of the staff is very evident and significant outputs have been achieved over a whole range of activities, covering publications, grant winning, conference organisation, industrial engagement etc.

Significant achievements during the recent past include the very professional organisation of a conference to the highest international standards; the development of a large-scale EU-funded research project, the steady production of conference publications, in addition to a sound proportion of academic journal publications; the setting up of a usability laboratory - a relatively unique facility in Wales; the importing of a substantial new base of specialism in wireless technologies and a success in a radio frequency identification tagging (RFID) project, which is intended to be rapidly grown into an additional research theme.

33 Learning support

Institutional level support for students

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

- Library & IT Resources
- The Assessment Centre
- DisAbility Support Team
- Irlen Centre
- Careers Centre and Job Shop
- Zone Enterprise hub
- Chaplaincy
- Counselling & Wellbeing
- Student Funding and Welfare
- International Welfare
- Student Programmes Centre
- Glyndŵr Students' Union

Faculty support for students

All students at Wrexham Glyndŵr 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. It is a vital role to support student engagement and retention, and to help every student to success to the best of his or her ability.

Programme specific support for students

Induction

New students on the programme will undergo an induction programme that will provide them with a full introduction to the programme and will include elements of work on study skills and professional development.

Student Handbook
All students on the programme will receive a Student Handbook, provided electronically via the VLE, which will contain details and guidance on all aspects of the programme and forms of student support and guidance, programme-based, and Faculty-based.

Computing Labs
The majority of Computing provision is located on the Wrexham campus, including teaching rooms, lecture theatres, staff offices, and specialist labs. There are a number of specialist computer labs on the Wrexham campus, including general purpose computing laboratories that support the teaching. These specialist labs offer access to a range of software that is utilised within the modules defined in the programme.

Open Door Policy
Computing operates an Open Door policy, meaning that academic staff are readily and easily accessible and approachable for students outside of scheduled learning and teaching hours. Staff can be approached without the need for a formal appointment to be made.

Progress Review and Attendance Monitoring
Student attendance will be subject to regular monitoring through registers, and this will be a means of addressing issues of student support. There will also be regular reviews for each student with personal tutors.

34 Equality and Diversity

Glyndŵr 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 Equal Opportunities Policy (http://www.glyndwr.ac.uk/en/AboutGlyndwrUniversity/Governance/TheFile,64499,en.pdf), ensuring that everyone who has the potential to achieve in higher education is given the chance to do so.