Module Descriptor

Title	Security Fundamentals		
Session	2025/26	**Status**	Published
Code	COMP07075	**SCQF Level**	7
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Raman Singh		

Summary of Module

This module aims to provide students with fundamentals of security, including general security architecture and principles of secure design, cryptography, and system threats & vulnerabilities. This module also introduces security issues of data, network and software development that affect the ICT systems.

In addition, general ethical and legal issues and general organisational operations of secure systems are also provided to give students an overview of operating secure systems. Undertaking this module will develop a range of graduate attributes. Knowledge and understanding of the principles and techniques used to secure the data and information for current and future applications.

This module will work to develop a number of the key 'I am UWS' Graduate Attributes to make those who complete this module:

- Universal: Critical Thinker, Ethically minded, Research-minded
- Work Ready: Problem-Solver, Effective Communicator, Ambitious
- Successful: Autonomous, Resilient, Driven

Module Delivery Method	**On-Campus[1]**	**Hybrid[2]**	**Online[3]**	**Work -Based Learning[4]**
	☐	☒	☐	☐

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Campuses for Module Delivery	☐ Ayr ☐ Dumfries		☒ Lanarkshire ☐ London ☐ Paisley		☐ Online / Distance Learning ☐ Other (specify)	
Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Demonstrate a critical understanding of the general architecture of the secure systems and designing principles of security, including legal and ethical issues;
L2	Demonstrate detailed knowledge of operating systems as well as knowledge of networking fundamentals including the OSI model;
L3	Demonstrate a deep understanding of the weaknesses & vulnerability of systems and access control to these systems;
L4	Demonstrate a good understanding of cryptography and its applications;
L5	Effectively apply security measures to protect data, networks, and software;

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 7** A detailed understanding of computers, networks, operating systems, security architecture and design principles, cryptography applications, access control, and legal and ethical issues.
Practice: Applied Knowledge and Understanding	**SCQF 7** The ability to effectively apply security measures to protect data, networks, and software.
Generic Cognitive skills	**SCQF 7** Skills in identifying and analysing security threats.
Communication, ICT and Numeracy Skills	**SCQF 7** Skills in designing secure systems, report writing and presentation skills.
Autonomy, Accountability and Working with Others	**SCQF 7** Ability to work in a team.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	12
Tutorial / Synchronous Support Activity	12
Laboratory / Practical Demonstration / Workshop	24
Independent Study	152
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Eastom, C. (2023) Computer Security Fundamentals (5th Edition). Pearson. Panek, C. (2019) Security Fundamentals (1st Edition). Sybex Stallings, W and Brown, L. (2017) Computer Security: Principles and Practice. (4th Edition). Pearson. Oracle Virtual Box along with guest additions and VirtualBox Extension Pack.
(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Computing**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Business and Applied Computing
Moderator	TBC
External Examiner	M Davis
Accreditation Details	
Module Appears in CPD catalogue	☒ **Yes** ☐ **No**
Changes / Version Number	1.09

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Practical Coursework (60%)
Assessment 2
Group Project (40%)
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
Report of practical/field/ clinical work	☒	☒	☒	☒	☐	60	0

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Dissertation/ Project report/Thesis	☐	☐	☐	☐	☒	40	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	0 hours

Change Control

What	When	Who
Attendance and Enagaement and Equality and Diversity statements updated.	17/1/25	L Smith