

## MODULE DESCRIPTOR

### Module Title

Human Factors in Security

Reference	CMM542	Version	1
Created	November 2021	SCQF Level	SCQF 11
Approved	January 2023	SCQF Points	15
Amended		ECTS Points	7.5

### Aims of Module

To enable students to critically appraise the role of human factors in cyber security; particularly when designing secure and usable systems, considering key aspects including security, privacy, usability, technology acceptance, and the socio-technical context.

### Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Evaluate the role of human behaviour in security.
- 2 Appraise the usability criteria of security mechanisms.
- 3 Apply techniques from interaction design, software engineering, and security engineering to design secure systems.
- 4 Assess and propose measures that an organisation requires to ensure long-term, productive security.

### Indicative Module Content

The role of human factors and Positive Security; Behavioural Aspects and Acceptance for Designing Secure and Usable Systems; Human error; Security and Privacy Requirements Engineering; Usable, Security Design Techniques and Processes; Requirements and Threats/Attacks Modelling; and Security architecture; Usable Authentication; Usable Authorization; Security awareness, education, and training; Security economics and entrepreneurship.

### Module Delivery

Key concepts are introduced and illustrated through lectures and directed reading. The understanding of students is tested and further enhanced through lab and tutorial sessions.

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	30	40
Non-Contact Hours	120	110
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

**ASSESSMENT PLAN**

If a major/minor model is used and box is ticked, % weightings below are indicative only.

**Component 1**

Type: Coursework Weighting: 100% Outcomes Assessed: 1, 2, 3, 4

Description: This is a coursework where students will appraise all the relevant human factors in designing usable security for a given scenario.

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

The calculation of the overall grade for this module is based on 100% weighting of C1. An overall minimum grade D is required to pass the module.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	The student needs to achieve an A in Component 1.
<b>B</b>	The student needs to achieve a B in Component 1.
<b>C</b>	The student needs to achieve a C in Component 1.
<b>D</b>	The student needs to achieve a D in Component 1.
<b>E</b>	The student needs to achieve an E in Component 1.
<b>F</b>	The student needs to achieve an F in Component 1.
<b>NS</b>	Non-submission of work by published deadline or non-attendance for examination

**Module Requirements**

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

**INDICATIVE BIBLIOGRAPHY**

- 1 FAILY, S. 2018. Designing Usable and Secure Software with IRIS and CAIRIS. Springer.
- 2 FERNANDEZ, E. B. 2013. Security Patterns in Practice: Designing Secure Architectures Using Security Patterns. Wiley.
- 3 CRANOR, L. F. and GARINKEL, S. 2005. Security and Usability: Designing Secure Systems that People Can Use. O'Reilly.
- 4 Symposia on Usable Privacy and Security. 2015-2021. <https://www.usenix.org/conferences/byname/884>
- 5 GARFINKEL, S., and LIPFORD, H. R. 2014. Usable Security: History, Themes, and Challenges. Synthesis Lectures on Information Security, Privacy, and Trust. Morgan & Claypool.
- 6 ROPER, C. A., GRAU, J. J., and FISCHER, L. F. 2006. Security education, awareness, and training: from theory to practice. Elsevier Butterworth-Heinemann.
- 7 BREAU, T., ed., 2020. An Introduction to Privacy for Technology Professionals. 2020. IAPP Publication.
- 8 ANDERSON, R., 2020. Security Engineering. Wiley