Degree in Computing with Security & Cryptography

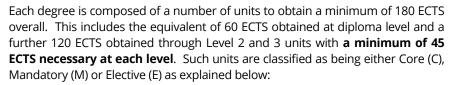**MQF LEVEL** QUALIFICATION: **6**

TOTAL CREDITS: 180ECTS

DURATION: Full time **2 Year** *(18 Months)* / Part time **3 Years** *(27 Months)*

Job Opportunities

Cyber Security Analyst
IS Analyst
Network Security
Cryptography Analyst
Security Management

Each degree is composed of a number of units to obtain a minimum of 180 ECTS overall. This includes the equivalent of 60 ECTS obtained at diploma level and a further 120 ECTS obtained through Level 2 and 3 units with **a minimum of 45 ECTS necessary at each level**. Such units are classified as being either Core (C), Mandatory (M) or Elective (E) as explained below:

− **Core units** - units which are core to all computing programmes. These are compulsory for all students.

− **Mandatory units** - units which are mandatory for that particular programme. These units are compulsory for those students following the respective programme.

− **Elective units** - units which are not compulsory but still required to ensure the students complete the minimum ECTS requirements for the degree. Such units are typically selected in relation to the programme of studies being followed by the student. Elective units are subject to availability and at the discretion of the institute.

Core Units

The following Level 2 and Level 3 units are compulsory to all the computing degrees and amount to a total of **46 ECTS**.

Code	Study Unit		ECTS
SMc20347	Software Engineering	*A*	7
SMc20374	Programming for Prototyping	*W*	4
SMc20375	Specified Task	*S + SU*	7
SMc20386	Introduction to Intelligent Systems	*A*	3
SMc21372	Statistics	*A*	7
SMc30390	Research Project	*Supervision (All Year)*	15
SMc30397	Designing and Analysing Experiments	*A*	3

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Further to the 46 ECTS from the Core units, the Degree in Computing with Security and Cryptography consists of the following Mandatory units for an additional **49 ECTS**:

Code	Study Unit		ECTS
SMc20390	Private and Public Key Encryption	*TBA*	2
SMc21342	Internet Programming	*W*	7
SMc21349	Intermediate Data Communications	*A*	7
SMc21363	Implementing and Maintaining Database Security and Integrity	*W*	3
SMc21391	Cryptanalysis	*TBA*	4
SMc21392	Modern Cryptographic Systems I	*A*	6
SMc21393	Modern Cryptographic Systems II	*W*	6
SMc30418	Professional Issues	*TBA*	7
SMc31419	Computer Forensics	*TBA*	7

The remaining **25 ECTS** credits (minimum) to complete the qualification need to be selected from the Elective units below:

Code	Study Unit		ECTS
SMc20348	Algorithmic Design and Analysis	*W*	7
SMc20369	Industrial Placement Programme	*S + SU*	9
SMc20373	Mobile Interaction	*W*	4
SMc20385	Fundamentals of Mixed Reality	*TBA*	3
SMc21341	Graphical Object-oriented Programming	*A*	7
SMc21353	Server Side Scripting	*A*	3
SMc21371	Advanced Database Principles and Distributed Systems	*W*	3
SMc21380	Number Systems and Functions	*TBA*	4
SMc21381	Logic and Set Theory	*TBA*	2

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SMc21382	Graph Theory and Trees	TBA	2
SMc21383	Series and Matrices	TBA	4
SMc30381	Data Compression	TBA	7
SMc30395	E-business	TBA	7
SMc30398	Requirements Engineering	S	4
SMc30400	Introduction to Systems Programming	TBA	2
SMc30413	Fintech - Technology and Concepts	TBA	7
SMc30420	Security Management	TBA	7
SMc31387	Artificial Intelligence	TBA	7
SMc31402	Machine Learning	TBA	7
SMc31403	Natural Language Processing	TBA	7
SMc31414	Advanced Machine Learning and Concepts	TBA	7
SMc31421	Ethical Hacking	TBA	7
SMc31422	Wireless Security	TBA	7
SMc31423	Email and Web Security	TBA	7
SMc31424	Key Management	TBA	7
SMc31425	Hash Functions	TBA	7

The following units are Precluded for this programme:

Code	Study Unit		ECTS
SMc30382	Computer Security	TBA	7
SMc30415	The Ethics of Information Technology in Society	TBA	3

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