

Module Details	
Module Title	Foundations of Cryptography
Module Code	COS6007-B
Academic Year	2021/2
Credits	20
School	Department of Computer Science
FHEQ Level	FHEQ Level 6

Contact Hours	
Type	Hours
Online Lecture (Synchronous)	24
Tutorials	11
Directed Study	165

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2

Module Aims
To gain an understanding of the mathematical principles underlying cryptography and to be able to apply cryptographic techniques to securing network applications.

Outline Syllabus
Stream and block ciphers. Public key encryption. Hash functions and data integrity. Identification and entry authentication. Digital signatures. Key establishment protocols. Key management techniques. Design and analysis of cryptographic protocols.

Learning Outcomes	
Outcome Number	Description
01	Demonstrate an understanding of the use of appropriate cryptographic primitives and protocols for securing network applications.
02	Analyse, and select from, a range of cryptographic primitives and protocols with a view to recommending appropriate cryptographic systems for securing network applications.
03	Display the ability to transfer theoretical concepts to practical applications

Learning, Teaching and Assessment Strategy
Concepts, principles and theories are outlined in formal lectures and seminars. Concepts, principles and theories are supported by demonstrations and by practical exercises undertaken during tutorials and as directed study. Oral feedback is given during tutorials and seminars. The formal examination will assess the learning outcomes.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Coursework - Written	Two short answer questions testing the ability to apply the formalisms introduced in the lecture	20%
Summative	Examination - Closed Book	Three questions drawn from the topics covered in the module (2 Hrs)	80%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.