

Computer Security

Module Information

2022.01, Approved

Summary Information

Module Code	6101COMP
Formal Module Title	Computer Security
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	22
Tutorial	11

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	Understand security threats and vulnerabilities to information, computing and communications systems. Assess critically a variety of generic security technologies for protection of computer networks. Develop practical skills in the use of security countermeasure technologies and associated tools.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically evaluate the threats and vulnerabilities to information, computing and communications systems.
MLO2	2	Design and develop security countermeasures for a computing application
MLO3	3	Critically assess the use of information security management techniques.

Module Content

Outline Syllabus	Computer security background; security goals, problems, models. Security services: authentication, key management and PKI, Kerberos. Security technologies including firewalls, intrusion detection systems, biometrics, anti- viruses, access controls. Malware; viruses and worms, botnets, mobile code security. Securing the personal computer and network from attack; safe use of the Internet and Web. Access control: Bell-LaPadula, Chinese Wall, Biba. Cryptographic techniques: algorithms, protocols, authentication, key management and PKI, Kerberos, IPSec, SSL/TLS. Security management: policies, risk assessment, legal considerations, privacy, ethics, standards, education. Introducing security research topics; e.g. trusted computing, composition, digital rights.
Module Overview	
Additional Information	The spectacular growth of the Internet has spawned a great demand for awareness of security threats to computer networks and application of security techniques to network protection. In response to the demand, this module examines various security issues and solutions to computer and network protection.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Artefacts	Security Software Task	40	0	MLO1, MLO2
Centralised Exam	Exam	60	2	MLO1, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Aine Mac Dermott	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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