

Liverpool John Moores University

Title: COMPUTER SECURITY
Status: Definitive
Code: **6101COMP** (121258)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Computer Science and Mathematics

Team	Leader
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Academic Level: FHEQ6 **Credit Value:** 20 **Total Delivered Hours:** 57
Total Learning Hours: 200 **Private Study:** 143

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	22
Tutorial	11

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Security Software Task	40	
Exam	AS2	Examination	60	2

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.

Learning Outcomes

After completing the module the student should be able to:

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

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Security Software Task	1	2
Exam	1	3

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.

Learning Activities

Include attending lectures, practical sessions and tutorials, as well as reading online resources.

Notes

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.