Ethical Hacking

Module Information

2022.01, Approved

Summary Information

Module Code	7141COMP
Formal Module Title	Ethical Hacking
Owning School	Computer Science and Mathematics
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	11
Practical	22

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To gain a significant understanding of various security vulnerabilities and cyber threats to computer systems/applications as well as the importance of cyber security.To assess critically a variety of ethical hacking tools and penetration testing techniques for the protection and evaluation of computer systems and applications.To promote the use of appropriate ethical security techniques to solve cyber security problems.To understand practices of network forensics and intrusion analysis to aid cyber threat intelligence gathering.To develop independent research skills in threat intelligence to detect, respond to, and defeat focused and targeted threats.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Deploy ethical hacking tools and techniques to complex computer systems
MLO2	2	Demonstrate critical awareness of recent developments in ethical hacking techniques
MLO3	3	Critically review developments in system defence, response and intelligence techniques.

Module Content

Outline Syllabus	Ethical hacking fundamentals: Penetration testing lifecycle, vulnerability detection, vulnerability-scanning techniques.Hacking methods and tools: system hacking methods exploit frameworks, network and device-hacking techniques, web application attacks, password attacks and exploit development.Advanced techniques: malicious software code, network forensics, intrusion detection and prevention, cyber threat hunting, security monitoring and incident response techniques and procedures.
Module Overview	
Additional Information	The spectacular growth of the Internet has spawned a great demand for secure computer systems. Ethical hacking can help to assess the cyber security defence of computer systems. Intrusion detection and firewalls provide additional layers of defence for the detection and prevention of cyber-attacks on computer systems. This module examines various cyber security issues and solutions within these areas.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Report on hacking tools	40	0	MLO1, MLO2
Report	Report on defence tools	60	0	MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Alex Akinbi	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings