

Ethical Hacking

Module Information

2022.01, Approved

Summary Information

| | |
|---------------------|----------------------------------|
| Module Code | 6717YCOM |
| Formal Module Title | Ethical Hacking |
| 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 |
| LJMU Partner Taught |

Partner Teaching Institution

| |
|--|
| Institution Name |
| YPC International College (Kolej Antarabangsa YPC) |

Learning Methods

| Learning Method Type | Hours |
|----------------------|-------|
| Lecture | 22 |
| Practical | 22 |

Module Offering(s)

| Display Name | Location | Start Month | Duration Number Duration Unit |
|--------------|----------|-------------|-------------------------------|
| SEP-PAR | PAR | September | 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 techniques for the protection and evaluation of computer systems and applications. To promote the use of appropriate security techniques to solve cyber security problems. |
|------|--|

After completing the module the student should be able to:

Learning Outcomes

| Code | Number | Description |
|------|--------|--|
| MLO1 | 1 | Identify ethical, legal, and social issues around the use of hacking tools |
| MLO2 | 2 | Critically review existing research-based defence solutions |
| MLO3 | 3 | Plan and deploy appropriate solutions in relation to practical network security problems |
| MLO4 | 4 | Critically analyse ethical hacking methods for the evaluation of network security |

Module Content

| | |
|------------------------|--|
| Outline Syllabus | Ethical hacking: fundamentals and concepts Open Source Intelligence Security vulnerabilities and detection Attack foot printing Attack scanning techniques System hacking methods Network and device hacking techniques Web application vulnerabilities and attacks Exploit development and defence Ethical hacking reporting Responding and security solutions Ethical, Legal and Social: UK, EU and International Cybercrimes laws and regulations. |
| Module Overview | |
| Additional Information | The growth of the Internet has spawned a great demand for secure computer systems. Ethical hacking provides the concept for finding vulnerabilities before real attackers do in order for these vulnerabilities to be fixed and associated risks mitigated. It also helps to test the cyber security defence of computer systems. This module examines various ethical hacking concepts, tools, techniques and provides solution to fix identified threats. |

Assessments

| Assignment Category | Assessment Name | Weight | Exam/Test Length (hours) | Module Learning Outcome Mapping |
|---------------------|------------------------------|--------|--------------------------|---------------------------------|
| Report | Review ethical hacking tools | 40 | 0 | MLO1, MLO2 |
| Artefacts | Simulated attack and defence | 60 | 0 | MLO3, MLO4 |

Module Contacts

Module Leader

| Contact Name | Applies to all offerings | Offerings |
|--------------|--------------------------|-----------|
| Glyn Hughes | Yes | N/A |

Partner Module Team

| Contact Name | Applies to all offerings | Offerings |
|--------------|--------------------------|-----------|
|--------------|--------------------------|-----------|