

Hugh Baldwin  
up2157117

## **Ethical Hacking**

M30239

TB2

University of Portsmouth  
**BSc Computer Science**  
2nd Year

# Contents

<b>1</b>	<b>Lecture - Introduction to Penetration Testing</b>	<b>2</b>
<b>2</b>	<b>Lecture - Information Gathering</b>	<b>4</b>

# Lecture - Introduction to Penetration Testing

09:00

22/01/24

Tobi Fajana

## Weekly Teaching Materials

- 1 hour lecture
- 2 hour practical
- Instructional video (Guide for Labs)
- Compulsory Moodle quiz

## Assessments

- Practical Exam, 2 hours (50%, 20/03/2024)
  - 2 Devices to exploit
  - 5 Vulnerabilities expected, give the name, software, risk rating, a brief description, and corrective actions for each exploit
- Multiple Choice Exam, 1 hour (50%, May/June)

## CIA

- The three main properties which are protected by cyber security
- Confidentiality - Protecting information from being disclosed to unintended parties
- Integrity - Protecting information from being modified, intentionally or otherwise
- Availability - Ensuring the information is available to access when it is needed

## Penetration Testing

- Black Box - No information about the target
- Grey Box - Some information about the target, but not all
- White Box - All information given, including source code, etc
- Timeframe - There is usually a fixed timeframe for the test
- Penetration Testing is similar to vulnerability assessment, but actual exploits the vulnerabilities

## Port Scanning

- Scan every port on a server to check which ports are open
- Attempt to ping the server on each port
- If a response is given from a port, it must be open

# Lecture - Information Gathering

---

09:00

29/01/24

Tobi Fajana

## Active Information Gathering

- Directly interacting with the target
- You typically gather more information actively, but you are much more likely to get caught
- Active methods include
  - Probing the Network (Port scanning, service version enumeration)
  - Social Engineering (Password gathering with phishing)
  - Directory and Share scanning

## Passive Information Gathering

- Avoid direct interaction as much as possible
- Much less likely to be caught, but less information is gathered
- Passive methods include
  - Using a Search Engine
  - Physical Observation (Looking over shoulder when typing a password)
  - DNS enumeration (Whois lookup, IP address lookup, shodan, etc)
  - OSINT Framework (Open Source Intelligence Network - Google Dorking, shodan, social media analysis)
  - GeoLocating people based upon images on social media
  - Searching on pastebin and other similar websites for the target
  - Looking on websites such as haveibeenpwnd.com to check if passwords for the target have been leaked