F21AN Advanced Network Security

### COURSE DETAILS
- **Course Code:** F21AN
- **Full Course Title:** Advanced Network Security
- **SCQF Level:** 11
- **SCAF Credits:** 15
- **Available as Elective:** Yes

### DELIVERY LEVEL
- **Undergraduate:** Yes
- **Postgraduate Taught:** Yes
- **Postgraduate Research:** No

### COURSE AIMS
- Improve students’ critical analysis skills in computer network security and allow them to identify network security threats in a systematic way.
- Provide the student with in-depth understanding of penetration testing concepts and methodologies.
- Give practical experience of exploiting vulnerabilities in common computer system architectures.
- Impart a deep understanding of common techniques to implement countermeasures.

### LEARNING OUTCOMES – SUBJECT MASTERY
At the end of this course, the students will be able to:
- Identify and explain vulnerabilities of network protocols.
- Design and implement countermeasures to protect a network from unauthorised network access.
- Identify threats and implement measures to protect against threats in wireless networks.
- Test and evaluate the security of an IT infrastructure.

### LEARNING OUTCOMES – PERSONAL ABILITIES
- Ability to critically appraise the security of an IT infrastructure.
- Showing teamwork skills and being an effective member of a penetration testing team.
- Develop a set of ethical best practices needed for a security career.
- Ability to make decisions regarding how to secure a system in absence of a complete picture of its configuration.

### SYLLABUS
- Wireless Security: Wired Equivalent Privacy (WEP) vulnerabilities, Wireless Protected Access (WPA) and IEEE802.11i
- Penetration testing: penetration testing process: Reconnaissance, Scanning, Gaining access, Maintaining
access, and Covering tracks.
- Digital Forensics: introduction, EnCase and open source tools.
- Privacy and P3P.

Information on Pre-requisites:-

A good understanding of fundamental computer security topics such as might be obtained by taking F21 CN Computer Network Security is pre-requisite.

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