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

Additional Information:

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

• Internet Security: review of some TCP/IP stack Protocols and their known vulnerabilities.
• Wireless Security: Wired Equivalent Privacy (WEP) vulnerabilities, Wireless Protected Access (WPA) and
  IEEE802.11i
• IS027001: Information Security Management. Security Policy, Organisational Security, Asset Classification and
  Control, Personal Security, Physical and Environmental Security, Communications and Operations Security,
• Penetration testing: penetration testing process: Reconnaissance, Scanning, Gaining access, Maintaining
F21AN Advanced Network Security

- 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.

COURSE RELATIONSHIPS

N/A

LOCATION AND ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>Edi</th>
<th>SBC</th>
<th>Ork</th>
<th>Dub</th>
<th>Malay</th>
<th>IDL</th>
<th>COLL</th>
<th>ALP</th>
<th>OTH</th>
<th>Method</th>
<th>Weight</th>
<th>Exam Mins</th>
<th>Type</th>
<th>Diet</th>
<th>Synoptic Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Examination</td>
<td>60</td>
<td>120</td>
<td>Assessment</td>
<td>Semester 2</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Coursework</td>
<td>40</td>
<td>120</td>
<td>Assessment</td>
<td>Semester 2</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Examination</td>
<td>100</td>
<td>120</td>
<td>Reassessment</td>
<td>Semester 3</td>
<td></td>
</tr>
</tbody>
</table>