F29DC Data Communications and Networking

COURSE DETAILS
Course Code: F29DC
Full Course Title: Data Communications and Networking
SCQF Level: 9
SCAF Credits: 15
Available as Elective: No

DELIVERY LEVEL
Undergraduate: Yes  Postgraduate Taught: Yes  Postgraduate Research: No
Additional Information:

COURSE AIMS
Introduction to data communications and computer networking
Understanding of the structure of Internet
Understanding of concepts of connection oriented and connectionless communication, and principles of data communication protocols

LEARNING OUTCOMES – SUBJECT MASTERY
- Understanding of data communication protocols
- Appreciation of necessity for formal specification and verification of protocols.
- Appreciation of complexity of network infrastructure and sensitivity to parameter choices

LEARNING OUTCOMES – PERSONAL ABILITIES

Professional Development
- Appreciation of role of standards in networking
- Appreciation of precision and need for validation in specification of data communication protocols

Practical Expertise
- Ability to analyse and explain basic issues relating to communication and networking technologies
- Practice in ICT, numeracy and report writing, team working

SYLLABUS
- Internet history and organisation, OSI and Internet reference models
- Link level communications, data transparency, error detection, sliding window protocols
- Network layer protocols, IP, ICMP
- network routing
- routers
- Transport protocols, TCP, UDP
- Congestion control
- Higher level protocols e.g. HTTP (simple example only)

Note: Prerequisite knowledge of Computer Architecture and Object Oriented Programming is required.

<table>
<thead>
<tr>
<th>COURSE RELATIONSHIPS</th>
<th>School</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Code</td>
<td>Level</td>
<td>Title</td>
</tr>
<tr>
<td>F27SA</td>
<td>7</td>
<td>Software Development 1</td>
</tr>
<tr>
<td>F27CS</td>
<td>7</td>
<td>Introduction to Computer Systems</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LOCATION AND ASSESSMENT METHODS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Edi</td>
<td>SBC</td>
<td>Ork</td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>