**COURSE DETAILS**

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

**DELIVERY LEVEL**

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<th>Postgraduate Research</th>
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**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
F29DC Data Communications and Networking

- routers
- Transport protocols, TCP, UDP
- Congestion control
- Higher level protocols e.g. HTTP (simple example only)

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

COURSE RELATIONSHIPS

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<td>Software Development 1</td>
<td>School of Math and Comp Sci.</td>
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LOCATION AND ASSESSMENT METHODS

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