# F29DC Data Communications and Networking

## COURSE DETAILS

<table>
<thead>
<tr>
<th>Course Code: F29DC</th>
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<tbody>
<tr>
<td>Full Course Title: Data Communications and Networking</td>
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<tr>
<td>SCQF Level: 9</td>
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<tr>
<td>SCAF Credits: 15</td>
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<td>Available as Elective: No</td>
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## DELIVERY LEVEL

| Undergraduate: Yes | Postgraduate Taught: Yes | Postgraduate Research: No |

## 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
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- 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.