Module Title **Introduction To Telecommunications** **Keywords** Signal Fundamentals, Communication Media, Information Theory, Data Transmission, Digital Transmission, Modulation. Multiplexing	Reference EN2520 SCQF SCQF Level 8 SCQF Points 15 ECTS Points 7.5 Created May 2002 Approved March 2004 Amended July 2012 Version No. 4

This Version is No Longer Current

The latest version of this module is available here

Prerequisites for Module

Successful completion of SCQF 7 level or equivalent.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide the student with the ability to analyse the fundamentals of communication techniques and information theory.

Learning Outcomes for Module

On completion of this module,

Data Transmission: Modems, Telecommunications standards, ADSL

Indicative Student Workload

Contact Hours	Full Time	Part Time
Lectures	24	24
Tutorials	12	12
Directed Study		
Directed Self Study	24	24
Private Study		
Private Study	90	90

Mode of Delivery

This is a lecture-based course supplemented with tutorial sessions and student-centred learning.
Various topics will be supported

students are expected to be able to:

1. Apply standard mathematical principles to analysing signals and transmission systems.
2. Analyse simple digital and analogue based telecommunication systems.

Indicative Module Content

Fundamental concepts:
Frequency, phase, amplitude.
Information sources, time and frequency domain, bandwidth, noise.
Basic modulation techniques.
Radio receiver and transmitter topologies and parameters.
Introduction to antennas and propagation.

Brief history of telecommunications.
Overview of analogue and digital communications and analogue and digital transmission.
Digital transmission: sampling, Pulse Code Modulation, Multiplexing.
Information Theory: channel capacity, performance bounds for data transmission.

by self directed student work using simulation tools.

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,2

Component 1 is an examination. (100% weighting)

Indicative Bibliography

1. Glover I, Grant PM. Digital communications. Pearson Education; 2010.
2. Stallings W. Data and computer communications. Pearson Hall; 2013.
3. Schiller JH. Mobile communications. Pearson education; 2003.
4. Haykin SS, Moher M. Modern wireless communications. Pearson Education India; 2011.
5. Haykin S. Communication systems. John Wiley & Sons; 2008.
6. Dunlop J. Telecommunications engineering. Routledge; 2017.