# MODULE **DESCRIPTOR**

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| **MODULE TITLE** | DIGITAL COMMUNICATIONS | | |
| **MODULE CODE** | EL3808 (L6) | **CREDIT VALUE** | 10 CREDITS (5 ECTS) |
| **CAMPUS** | UCLAN CYPRUS | | |
| **SCHOOL** | SCHOOL OF SCIENCE | | |
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## MODULE **AIMS**

To give students an overview of modern Digital communication systems.
To enable students to analyse, design and compare the performance of different digital communication systems.
To give students the ability to make informed decisions on the most appropriate telecommunication system to choose for a given circumstance.

## MODULE **CONTENT**

Introduction to Electronic Communication Systems. Time/Frequency Domain Representation of Digital Signals. Baseband and Bandpass Communication Systems. Basics of data transmission, intersymbol interference, symbol timing recovery, matched filtering for signal detection (analysis, design and implementation), equalization, bit error rate (BER) performance, causes of communication systems degradation. Bandpass Digital Modulation Schemes. Orthogonal Frequency Division Multiplexing. Spread Spectrum Systems. Information Theory Coding. Foundations of information theory, source coding, channel coding, convolutional coding.

## INTENDED **LEARNING OUTCOMES**

| **On successful completion of this module a student will be able to:** | |
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| **1.** | Demonstrate a systematic and extensive knowledge of electronic communication techniques |
| **2.** | Design and critically analyse the performance of a number of different communication systems |
| **3.** | Critically evaluate new concepts in the current technology and standards related to communication systems, particularly in digital communication systems. |

## TEACHING **METHODS**

Lecture and tutorial exercises will be provided for students to gain an appropriate knowledge base. Current issues in communication systems will be introduced into the curriculum through journal articles, videos and other media sources (including the Internet). The engineering function in the design and realisation of communication systems will be highlighted with emphasis on a software implementation.

## ASSESSMENT **METHODS**

The module is assessed through an assignment and a written examination.