MODULE DESCRIPTOR

Module Title

Optical And Radio Communications

Reference	EN4521	Version	4
Created	March 2017	SCQF Level	SCQF 10
Approved	March 2004	SCQF Points	15
Amended	September 2017	ECTS Points	7.5

Aims of Module

To provide the student with the ability to analyse and design optical fibre and radio communication systems.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Identify and explain the structure and operation of an optical and radio transmission system.
2	Specify the essential parameters and performance for an optical fibre and radio transmission system.
3	Analyse the performance of an optical fibre and radio transmission system.
4	Evaluate an optical fibre and/or radio transmission system through in-depth specification and evaluation of parameters.

Indicative Module Content

Review of optical fibre transmission. Bandwidth limitations of fibres. Attenuation mechanisms. Optical fibre system design: Choice of fibres, source, detector and connectors. System design to meet a required power/bandwidth budget. Optical communications case study: Radio and Microwave Techniques: Use of matrix parameters in the design of components and circuits at high frequency. Components of radio and microwave front-end systems.

Module Delivery

This is a lecture-based course supplemented with tutorial sessions, case studies and student-centred learning. Extensive use of Computer Aided Learning based laboratory work is employed.

Indicative Student Workload	Full Time	Part Time
Contact Hours	50	50
Non-Contact Hours	100	100
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
Actual Placement hours for professional, statutory or regulatory body		

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ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	4
Description:	A report on work carried out as part of a design exercise				

Component 2

Type:	Examination	Weighting:	50%	Outcomes Assessed:	1, 2, 3
Description:	Closed book examination				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The module grade is calculated as the weighted average of the component marks. To pass the module the student must achieve a minimum of a grade D and at least 35% in all components.

Module Grade	Minimum Requirements to achieve Module Grade:
A	70% - 100%
B	60% - 69%
C	50% - 59%
D	40% - 49%
E	35% - 39%
F	0% - 34%
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	COLLIN, R.E., 2000. Foundations for Microwave Engineering, 2nd ed., London:Wiley-Blackwell.
2	GOFF, D.R., 2002. Fiber Optic Reference Guide: A Practical Guide to Communications Technology, Third Edition, Focal Press.