APPROVED

Institiúid Teicneolaíochta Chorcaí
Cork Institute of Technology

Awards
BSc

Programme Code:	CR_SPHYS_7	**Mode of Delivery:**	Full Time, Part Time, ACCS	**No. of Semesters:**	6
NFQ Level:	7				
Embedded Award:	No	**Programme Credits:**	180		
programmeReviewDate:	September 2023				
Department:	PHYSICAL SCIENCES				

Programme Outcomes

Upon successful completion of this programme the graduate will be able to demonstrate... :

PO1	Knowledge - Breadth	
	(a)	Demonstrate a detailed knowledge and understanding of, and some design capabilities in, a number of areas of applied physics and instrumentation relevant to technological industries.
PO2	Knowledge - Kind	
	(a)	Demonstrate a wide-ranging knowledge of process control, quality and safety systems, in the context of the operation of process industries and the nature of their products.
PO3	Skill - Range	
	(a)	Diagnose technical problems in a wide range of instrumentation systems for measurement of control.
PO4	Skill - Selectivity	
	(a)	Identify and implement solutions to technical processes.
PO5	Competence - Context	
	(a)	Collate, manage and evaluate data.
PO6	Competence - Role	
	(a)	Work ethically and professionally as an individual or within a team.
PO7	Competence - Learning to Learn	
	(a)	Recognise the need for life-long learning and professional development and to manage own learning needs at both personal and professional levels.
PO8	Competence - Insight	
	(a)	Demonstrate an awareness and an appreciation of the need for safety, sustainability, personal responsibility and ethics within the workplace and society.

Semester Schedules

Stage 1 / Semester 1

Mandatory	
Module Code	**Module Title**
PHYS6011	Introduction to Physics
PHYS6008	Instrument Measurement
CHEM6002	Chemical Principles
PHYS6050	Signal Measurement
MATH6060	Maths for Physical Sciences
CMOD6001	Creativity Innovation&Teamwork

Stage 1 / Semester 2

Mandatory	
Module Code	**Module Title**
ENVI6002	Environmental Instrumentation
PHYS6042	Fundamental Physics
PHYS6007	Instrument Calibration
MATH6019	Technological Maths 2 & Maple
PHYS6049	Signal Conditioning

Elective	
Module Code	**Module Title**
CHEM6013	Physical Chemistry Principles
PHYS6051	Astronomy & Instrumentation
FREE6001	Free Choice Module

Stage 2 / Semester 1

Mandatory	
Module Code	**Module Title**
PHYS6006	Intro. Industrial Automation
STAT6014	Intro Stats for Phys. Sc.
PHYS6030	Instrumentation Technology
PHYS6021	Mechanics and Electromagnetism
PHYS6024	Intro to Prog for Measurement

Elective	
Module Code	**Module Title**
FREE6001	Free Choice Module
PHYS6038	Water Quality Instrumentation

Stage 2 / Semester 2

Mandatory	
Module Code	**Module Title**
PHYS6025	Introduction - Process Control
PHYS6031	Process Instrumentation
PHYS6022	Photonics and Optics
MATH7030	Calculus & Laplace Transforms
PHYS6043	Environmental Physics

Elective	
Module Code	**Module Title**
PHYS7032	Optical &High Energy Astronomy
CHEM6008	Quality & Validation
PHYS6035	CAD for Instrumentation
FREE6001	Free Choice Module

Stage 3 / Semester 1

Mandatory	
Module Code	**Module Title**
PHYS7009	Control for Process Industries
PHYS7008	Industrial Automation & SCADA
PHYS7011	Programming for Measurement
PHYS7031	Material Physics and Design
MATH7010	Mathematics for Science 3.1

Elective	
Module Code	**Module Title**
PHYS7021	Process Quality Systems
BIOT7006	Biopharmaceutical Upstream
ENVI8006	Environmental GIS
FREE6001	Free Choice Module

Stage 3 / Semester 2

Mandatory	
Module Code	**Module Title**
PHYS7019	Work Placement/Project (ext)
PHYS7004	Industrial Comms & Networks
PHYS7002	Digital Systems & Interfacing

Elective	
Module Code	**Module Title**
PHYS7018	Methodological Research
ELEC7028	Industrial Electrical Systems
PHYS7029	Smart Sensor Instrumentation