Module Descriptor for CNWY40130 in 2025/2026

Short Title	Long Title	Subject Area	College	School/Unit	Last Modified
Flow Cytometry	Flow Cytometry: Principles and Practice	Conway Institute	Research Inst & Other Entities	UCD Conway Institute	25 Jul 2025

UCD Level	Credits (ECTS)	Semester/Trimester	Grade Scale	VLE Setup	Module Coordinator	Status
4 - Masters	2.5	Summer	Distinction/Pass/Fail (GPA Neutral)	Start of Trimester	Alfonso Fernández	Active

Mode of Delivery	Internship Module	Module Type	Micro-credential Module	Active & Collab Learning Space
Face-to-Face	No	Research/Capstone Module	No	No

Overall Places	Core/Option	General Elective	First Year Elective	International	Open Learning
20	20	0	0	0	0

Purpose & Overarching Content

This module is designed for research students who wish to understand and become critically aware of principles, practice and applications of flow cytometry and become competent, independent users of this technology. It will be delivered in five blocks comprising seminars (3 hrs - morning) and practical sessions (3 hrs - afternoon) covering:Introduction to flow cytometry: principles & data analysis [Block 1]Flow cytometry instrumentation [Block 2]Flow cytometry applications; Apoptosis, cell cycle & physiology [Block 3]Flow cytometry applications; immunology, physiology and clinical cytometry [Block 4]Flow cytometry clinical and industrial applicationsy & synergies with allied technologies [Block 5]

Learning Outcomes

On completion of the course, students should:1. Demonstrate knowledge and understanding of the principles of Flow Cytometry (FC).2. Be able to obtain and critically assess FC data using specific analysis software applications and pre-acquired samples.3. Become familiar with instruments and their components, demonstrate understanding and critical awareness of the process of analysis protocol creation.4. Integrate knowledge of good laboratory practice in instrument usage, sample preparation, quality control, troubleshooting.5. Describe the biology of apoptosis, the cell cycle & general physiology.6. Be able to integrate knowledge of apoptosis, cell cycle and physiology into protocol design for FC analysis and to carry out sample analysis using standard (and/or own) samples and protocols.7. Understand the concepts of immunophenotyping & phagocytosis.8. Apply knowledge and understanding of FC to the analysis of immunological & phagocytic cells, carry out sample characterization using standard (and/or own) samples and protocols.9. Become critically aware of uses of FC outside the academic research setting.10. Achieve understanding of allied technologies such as high content analysis, live cell imaging, confocal and fluorescent microscopy and be able to critically assess the synergistic benefits of flow cytometric analysis in combination with allied technologies.

Approaches to Teaching and Learning

A series of lectures and hands-on sessions will be delivered over one week.
Practicals sessions will reinforce the concepts explained during the lecture sessions.
Lectures will be though by experts in the field of cytometry with different background
The course is design to cover the needs of participants with no previous knowledge to provide a basic level, participants with basic knowledge to reinforce their concepts and practices and for participants with advanced level of knoledge, increasing their capabilities, critical view, updates in the latest improvements in technology, standard operation procedures, etc.

Student Effort Hours

Student Effort Type	Hours
Contact Time	
Lectures	15
Total Contact Time	**15**
Specified Learning Activities	
Specified Learning Activities	15
Total Specified Learning Activities	**15**
Autonomous Student Learning	
Autonomous Student Learning	30
Total Autonomous Student Learning	**30**
Total	**60**

FTE Breakdown

School	FTE
S006 - School of Biology and Environmental Science	2
S025 - School of Medicine	6
S123 - Fees,State & Research Activity	92

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Assessment Details

Assessment Type	Description	Timing	Open Book?	% of Final Grade	Component Scale	Must-Pass?	In-module Component Repeat Offered?
Quizzes/Short Exercises	Participation during lectures and practical sessions. Criticism of a published paper Short Assesment Final scored based on the performance on the three activities	Week 15		100	Graded	No	No
Total				**100**			

Carry Forward of Passed Components
No

Feedback Strategy

Feedback Strategies	Sequence of Feedback
- Feedback individually to students, post-assessment	

Remediation Strategy

Remediation Type	Remediation Timing
In-Module Resit	Prior to relevant PEB

Associated Staff

Name	Role
Mr Mark Crowley	Module Assistant
Mr Patrick Moran	Module Assistant
Mr George Moschos-Paipetis	Module Assistant
Ms Elaine Quinn	Module Assistant

Associated Majors

Programme	Major	Stage	Module Type
DRLSC001 - Doctor of Philosophy (Post 06)	X434 - PublicHlthPhys&Sport Sc PhD PT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X253 - Translational Med PhD FT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X237 - Medicine PhD FT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X238 - Medicine PhD PT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X254 - Translational Med PhD PT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X810 - PhD Infection Biology(SMMS) FT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X811 - PhD Infection Biology(SMMS) PT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X254 - Translational Med PhD PT	1	Option Module
MTMED001 - Master of Science-Medicine	X846 - MSc Experimental Physiology FT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X810 - PhD Infection Biology(SMMS) FT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X434 - PublicHlthPhys&Sport Sc PhD PT	2	Option Module

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Associated Majors (continued)

Programme	Major	Stage	Module Type
DRLSC001 - Doctor of Philosophy (Post 06)	X237 - Medicine PhD FT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X811 - PhD Infection Biology(SMMS) PT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X253 - Translational Med PhD FT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X238 - Medicine PhD PT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X433 - PublicHlthPhys&Sport Sc PhD FT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X433 - PublicHlthPhys&Sport Sc PhD FT	1	Option Module

For help with the information on this report, please email curriculum@ucd.ie