



Module Descriptor for CNWY40130 in 2022/2023

Short Title	Long Title	Subject Area	College	School/Unit	Last Modified
Flow Cytometry	Flow Cytometry: Principles and Practice	Conway Institute	Research Inst & Other Entities	Conway Institute	26 Jul 2022

UCD Level	Credits (ECTS)	Semester/Trimester	Grade Scale	VLE Setup	Module Coordinator	Status
4 - Masters	2.5	Autumn and Summer (separate)	Distinction/Pass/Fail (GPA Neutral)	Module in Brightspace	Alfonso Fernández	Continuing Module

Mode of Delivery	Internship Module	Clinical / Fieldwork / Placement
	No	Other

Overall Places	Core/Option	General Elective	First Year Elective	International	Open Learning
10	10	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 applications & 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.

No Approaches to Teaching and Learning recorded for this module for 2022/2023

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

Assesment Type	Description	Timing	Open Book?	% of Final Grade	Component Scale	Must-Pass?	In-module Component Repeat Offered?
Assignment	Course end problem based assignment	Unspecified		70	Graded		
Multiple Choice Questionnaire	Competency in usage of technology	Unspecified		15	Graded		
Practical Examination	Online analysis	Unspecified		15	Graded		
Total				100			

Carry Forward of Passed Components
No

No Feedback Strategy recorded for this module for 2022/2023

No Remediation Strategy recorded for this module for 2022/2023

Associated Staff

Name	Role
Ms Iza Arrieta	Module Assistant
Mr Mark Crowley	Module Assistant
Ms Elaine Quinn	Module Assistant

Associated Majors

Programme	Major	Stage	Module Type
DRLSC001 - Doctor of Philosophy (Post 06)	X253 - Translational Med PhD FT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X238 - Medicine PhD PT	2	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X434 - PublicHlthPhys&Sport Sc PhD PT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X237 - Medicine PhD FT	2	Option Module
MTLSC007 - Master of Science	X846 - MSc Experimental Physiology FT	1	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
DRLSC001 - Doctor of Philosophy (Post 06)	X810 - PhD Infection Biology(SMMS) FT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X237 - Medicine PhD FT	1	Option Module
DRLSC001 - Doctor of Philosophy (Post 06)	X434 - PublicHlthPhys&Sport Sc PhD PT	2	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)	X433 - PublicHlthPhys&Sport Sc PhD FT	2	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	1	Option Module

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