Module Descriptor for CNWY41160 in 2025/2026

Short Title	Long Title	Subject Area	College	School/Unit	Last Modified
Analysis of Proteomic Data	Statistical Analysis of Proteomic Mass Spectrometric Protein Identification Data	Conway Institute	VP - Research, Innov & Impact	UCD Conway Institute	25 Jul 2025

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

Mode of Delivery	Internship Module	Module Type	Micro-credential Module	Active & Collab Learning Space
Blended	No	Other	No	No

Overall Places	Core/Option	General Elective	First Year Elective	International	Open Learning
24	24	0	0	0	0

Purpose & Overarching Content

To learn how to use modern mass spectrometric protein analysis tools in biological and medical research.

Learning Outcomes

- Using the programme MaxQuant to identify and quantify proteins from mass spectrometric data
- Using the programme Perseus to correctly analyse protein expression profiles on a statistical basis
- Using the programme Perseus to correctly analyse protein phosphorylation patterns on a statistical basis
- Learning to recognise data quality limits that can render a statistical analysis impossible
- Learning how to use Data Independent Analysis techniques (DIA) to increase reproducibility in mass spectrometric experiments
- Learning how to use DIA-NN to analyse DIA data
- Differentiating between the requirements in the analysis of protein identification data, clinical and protein modification data

Approaches to Teaching and Learning

Peer work, group work

Student Effort Hours

Student Effort Type	Hours
Contact Time	
Lectures	10
Total Contact Time	**10**
Specified Learning Activities	
Specified Learning Activities	12
Total Specified Learning Activities	**12**
Autonomous Student Learning	
Autonomous Student Learning	28
Total Autonomous Student Learning	**28**
Total	**50**

Assessment Details

Assessment Type	Description	Timing	Open Book?	% of Final Grade	Component Scale	Must-Pass?	In-module Component Repeat Offered?
Participation in Learning Activities	The course focusses on statistical data analysis. The students are asked to install the relevant programmes on their own computer and test the data analysis procedures during the course.	Week 1		100	Pass/Fail	No	No
Total				**100**			

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Carry Forward of Passed Components
Yes

Feedback Strategy

Feedback Strategies	Sequence of Feedback
- Feedback individually to students, post-assessment - Peer review activities	During the practical part of the course

Remediation Strategy

Remediation Type	Remediation Timing	Resit In	Terminal Exam
Resit	Within Two Trimesters	Spring	No

Prior Learning

Requirement	Details
Learning Requirements	-.Basic understanding why a statistical analysis is required -.Basic understanding what a statistical test is -.Basic understanding what a p-value is

Associated Staff

Name	Role
Mr George Moschos-Paipetis	Module Assistant
Ms Elaine Quinn	Module Assistant

Associated Majors

Programme	Major	Stage	Module Type
MTMED001 - Master of Science-Medicine	X846 - MSc Experimental Physiology FT	1	Option Module

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