NUI Galway
OÉ Gaillimh

School of Mathematics, Statistics & Applied Mathematics
B.Sc. Mathematical Science

For 4th year students Ac.Yr 2021/2022

4th year			Sem	Pre-requisites	Exclusion-requisites
B.Sc. Mathematical Science - 4BMS2					
Students are registered for Final Year Project					
MM4000	Final Year Project (10ECTS)		I+II		
Students must take a minimum of 30ECTS from the following CORE OPTIONS, depending on students' interest					
MA490	Measure Theory	Core Option	I	MA341 & MA342	
MA416	Rings	Core Option	I	MA343 & MA344	
MA482	Functional Analysis	Core Option	II	MA341 & MA342	
MA4344	Advanced Group Theory	Core Option	II		
MA3491	Fields and Applications	Core Option	II	MA343 & MA344	
MA385	Numerical Analysis I	Core Option	I		
MA378	Numerical Analysis II	Core Option	II		
MA3101	Euclidean and non-euclidean Geometry	Core Option	I		
MA437	Introduction to Mathematical Research Topics I	Elective	I	Pre-requisites apply.	
MA438	Introduction to Mathematical Research Topics II	Elective	II	Pre-requisites apply.	
MA495	Actuarial Mathematics: Life Contingencies II	Elective	II	MA311 & MA341 & MA490	
MA418	Differential Equations With Financial Derivatives	Elective	II	MA495	
MA4101	Teaching and Learning in Mathematics	Elective	I+II		
MA4102	Algebraic Foundations of Quantum Computing	Elective	I		
MP305	Modelling I	Core Option	I	[MP231 & MP232]	
MP307	Modelling II	Core Option	II	[MP231 & MP232]	
MP403	Cosmology And General Relativity	Core Option	I	[MP231 & MP232]	
MP491	Non-Linear Systems	Elective	II	[MP231 & MP232]	
MP356††	*Quantum Mechanics I*	*Core Option*	*I*	*2yr Cycle, requires [MP231 & MP232]*	
MP357††	*Quantum Mechanics II*	*Core Option*	*II*	*2yr Cycle, requires [MP231 & MP232]*	
MP410††	*Non-Linear Elasticity*	*Core Option*	*I*	*2yr Cycle, requires [MP231 & MP232]*	
MP366†	Electromagnetism	Core Option	I	2yr Cycle, requires [MP231 & MP232]	
MP494†	Partial Differential Equations	Core Option	I	2yr Cycle, requires [MP231 & MP232]	
MP365†	Fluid Mechanics	Core Option	II	2yr Cycle, requires [MP231 & MP232]	
ST417	Introduction to Bayesian Modelling	Core Option	I		
ST413	Statistical Modelling	Core Option	I	ST313	
ST4040	Modern Statistical Methods	Elective	II	ST413	
ST4020	Causal Inference	Elective	II	ST313	
MA461	Probabilistic Models for Molecular Biology	Elective	II		
CS402	Cryptography	Elective	II		
CS4423	Networks	Elective	II		
CS3304	Logic	Elective	I		
CS319	Scientific Computing	Elective	II		
CS4102	Geometric Foundations in Data Science I	Elective	I		
CS4103	Geometric Foundations in Data Science II	Elective	II		
CT336	Graphics and Image Processing	Elective	I	CS319	
CT4101	Machine Learning	Elective	I		
CT865	Human Computer Interaction	Elective	I	CS209, CS211, CT232, CT233	
CT548	Object Oriented Software Design & Development	Elective	II		
† Offered on a 2yr Cycle, next available in 2021.22, †† Offered on a 2yr Cycle, next available in 2022.23,					