School of Mathematics, Statistics & Applied Mathematics
B.Sc. Data Science Pathway

For 1st year students Ac.Yr 2021/2022

B.Sc. Undenominated Science - 1BS1 - Data Science Pathway						
1st year		**ECTS**		**Sem**	**Pre/Co-requisites**	**Exclusion-requisites**
MA180	Mathematics	15	Core	I+II		
CS102	Computer Science	15	Core	I+II		
Any other 30 ECTS						

For 2nd year students Ac.Yr 2021/2022

B.Sc. Undenominated Science - 2BS1 - Data Science Pathway						
2nd year		**ECTS**		**Sem**	**Pre/Co-requisites**	**Exclusion-requisites**
ST1111	Probability Models	5	Core	I	MA180	
ST1112	Statistical Methods	5	Core	II	ST1111	ST2003, ST2004
CS2101	Programming for Science and Finance	5	Core	I	CS102	
CT2101	Object Oriented Programming 1	5	Core	I	CS102	
CT2102	Object Oriented Programming 2	5	Core	II	CS102	
MA284	Discrete Mathematics	5	Core	I	MA180	
MA2286	Differential Forms	5	Core	I	MA180	
MA283	Linear Algebra	5	Core	II	MA180	
An additional 20ECTS pathway or electives.						
Please refer to the Programme Booklet for complete list of Pathways and electives.						

For 3rd year students Ac.Yr 2021/2022

B.Sc. Undenominated Science - 3BS9 - Data Science Pathway						
3rd year				**Sem**	**Pre/Co-requisites**	**Exclusion-requisites**
ST311	Applied Statistics I	5	Core	I		ST313
ST2003	Random Variables	5	Core	I		ST2001, ST2002
ST312	Applied Statistics II	5	Core	II		
ST2004	Statistical Inference	5	Core	II		ST2001, ST2002
CT511	Databases	5	Core	I		
CS319	Scientific Computing	5	Core	II		
Select 30 ECTS from electives list:						
CS3304	Logic	5	Elective	I		
CS211	Programming and Operating Systems	5	Elective	II		
CT3535	Object Oriented Programming	5	Elective	I		
CT331	Programming Paradigms	5	Elective	I		
CT411	Multimedia Development	5	Elective	II		
CT2108	Networks and Data Communications	5	Elective	II		
MA215	Mathematical Molecular Biology I	5	Elective	I		
MA216	Mathematical Molecular Biology II	5	Elective	II		
MA2287	Complex Variables	5	Elective	II		
MP305	Modelling I	5	Elective	I		
MP307	Modelling II	5	Elective	II		

4th year				Sem	Pre/Co-requisites	Exclusion-requisites
		B.Sc. Undenominated Science - 4BS2 - Data Science Pathway				
MM4000	Final Year Project	10	Core	I+II		
ST417	Bayesian Modelling	5	Core	I	ST2003(or disc.ST235)	
ST413	Statistical Modelling	5	Core	I	ST311 or ST313	
ST4040	Modern Statistical Methods	5	Core	II	ST413	
ST4020	Causal Inference	5	Core	II	ST311	
CS402	Cryptography	5	Core	II		
CS4423	Networks	5	Core	II		
CT475	Machine Learning & Data Mining	5	Core	I		
Select 15 ECTS from electives list:						
CS4102	Geometric Foundations in Data Analysis I	5	Elective	I	CS2101(or dsctd.CS208)&CS211 or MA283&MA2287	
CS4103	Geometric Foundations in Data Analysis II	5	Elective	II	CS4102	
CT421	Artificial Intelligence	5	Elective	I		
CT336	Graphics and Image Processing	5	Elective	I		
CT865	Human Computer Interaction	5	Elective	I		
CT422	Modern Info Management	5	Elective	I		
CT414	Distributive and Cooperative Systems	5	Elective	II		
Syllabus structure of any future years may be subject to change due to ongoing annual syllabus review.						