



Institiúid Teicneolaíochta Chorcaí
Cork Institute of Technology

APPROVED

Awards

HDip in Sc

Programme Code: CR_SDAAN_8

Mode of Delivery: Full Time, Part Time, ACCS

No. of Semesters: 2

NFQ Level: 8

Embedded Award: No

Programme Credits: 60

programmeReviewDate: September 2022

Department: MATHEMATICS

Programme Outcomes

Upon successful completion of this programme the graduate will be able to demonstrate... :

PO1	Knowledge - Breadth
	(a) Demonstrate detailed knowledge and understanding of areas of Mathematics, Statistics, Computer Science and Business Intelligence relevant to a Data Scientist.
PO2	Knowledge - Kind
	(a) Demonstrate understanding of the terminology, defining concepts and theories underlying the Data Science and Analytics field; demonstrate knowledge of the advanced methods and technologies for acquiring, interpreting and analysing big data, with a critical understanding of the appropriate contexts for their use; relate current issues in Data Science to society; understand current knowledge of the Data Science field, including current limits of theoretical and applied knowledge.
PO3	Skill - Range
	(a) Demonstrate mastery of relevant skills and tools in Statistics, Mathematics, Computer Science and Business Intelligence; use these to solve complex problems involving big data sets; interpret and apply appropriate and referenced literature and other information sources; work independently within defined time and resource boundaries; communicate scientific information in a variety of forms to specialist and non-specialist audiences.
PO4	Skill - Selectivity
	(a) Formulate and test hypotheses; design experiments; appreciate current limits of knowledge in the Data Science field and respond appropriately; think independently and make effective decisions; contribute fully to the day-to-day operations of the Data Science work setting.
PO5	Competence - Context
	(a) Apply data analysis skills and technologies in a range of contexts in order to critically interpret existing knowledge and apply in new situations; make and report appropriate decisions in a responsible and ethical manner.
PO6	Competence - Role
	(a) Act effectively under guidance in a peer relationship with qualified practitioners; participate constructively in a complex interdisciplinary team environment; plan for effective project implementation; reflect on own practices.
PO7	Competence - Learning to Learn
	(a) Learn to act in variable and unfamiliar learning contexts; identify learning needs and undertake continuous learning in the Data Science field; assimilate and apply new learning.
PO8	Competence - Insight
	(a) Demonstrate an understanding of the wider social, political, business and economic contexts of Data Science, including an appreciation of the philosophical and ethical issues involved.

Semester Schedules

Stage 1 / Semester 1

Mandatory	
Module Code	Module Title
DATA8001	Data Science and Analytics
DATA8002	Data Management Systems
COMP8060	Scientific Prog in Python
STAT8010	Intro to R for Data Science
STAT8006	Applied Stats & Probability
MATH8009	Maths Methods and Modelling

Stage 1 / Semester 2

Mandatory	
Module Code	Module Title
STAT8011	Regression Analysis
DATA8006	Data Science Analytics Project
DATA8005	Distributed Data Management
DATA8008	Data Visualisation & Analytics

Elective	
Module Code	Module Title
STAT8008	Time Series & PCA
COMP8043	Machine Learning