

Interdisciplinary (ID) Modules

ID5011 Geographic Information Systems for Environmental Management				
SCOTCAT Credits:	15	SCQF Level 11	Semester	1
Academic year:	2019/0			
Planned timetable:	To be arranged (Weeks 1 - 5)			
<p>This module provides an introduction to Geographic Information systems and their use in environmental problem solving. The module will be taught through a series of lectures, tutorials, laboratory classes and individual projects. The module will be assessed through class exercises and the final, short individual project. Students will be introduced to methods of acquiring, storing, analysing and displaying (2D and 3D) spatial digital data using the ArcGIS data package. An introduction to data manipulation and statistical techniques on a variety of environmental examples will be given. The module is taught within the School of Geography and Geosciences but incorporates datasets and analysis techniques used in earth and environmental science, biology, archaeology, and mathematics.</p>				
Pre-requisite(s):	Requires a basic ability in computer skills (basic word processing, spread sheet analysis) gained through saltire if not demonstrated			
Anti-requisite(s)	You cannot take this module if you take GE5005 or take ID5010 or take ID5012			
Learning and teaching methods of delivery:	Weekly contact: 6 lectures and 14 practicals and support sessions (Weeks 1 - 6).			
Assessment pattern:	Coursework = 100% (portfolio 70%, Individual Project 30%)			
Re-assessment pattern:	Resubmission of failed item(s) of Coursework			
Module coordinator:	Dr C R Bates			

ID5059 Knowledge Discovery and Datamining				
SCOTCAT Credits:	15	SCQF Level 11	Semester	2
Academic year:	2019/0			
Planned timetable:	11.00 am Mon (odd weeks), Wed and Fri			
<p>Contemporary data collection can be automated and on a massive scale e.g. credit card transaction databases. Large databases potentially carry a wealth of important information that could inform business strategy, identify criminal activities, characterise network faults etc. These large scale problems may preclude the standard carefully constructed statistical models, necessitating highly automated approaches. This module covers many of the methods found under the banner of Datamining, building from a theoretical perspective but ultimately teaching practical application. Topics covered include: historical/philosophical perspectives, model selection algorithms and optimality measures, tree methods, bagging and boosting, neural nets, and classification in general. Practical applications build sought-after skills in programming (typically R, SAS or python).</p>				
Anti-requisite(s)	Null			
Learning and teaching methods of delivery:	Weekly contact: Lectures, seminars, tutorials and practical classes.			
Assessment pattern:	2-hour Written Examination = 60%, Coursework = 40%			
Re-assessment pattern:	2-hour Written Examination = 60%, Existing Coursework = 40%			
Module coordinator:	Dr C R Donovan			
Module teaching staff:	Dr Carl Donovan, Team taught			

Interdisciplinary - Postgraduate - 2019/0 - July - 2019

ID5220 Biomedical Imaging and Sensing			
SCOTCAT Credits:	15	SCQF Level 11	Semester 2
Academic year:	2019/0		
Availability restrictions:	Only available to students on the MSc Digital Health		
Planned timetable:	To be confirmed		
<p>Medical imaging and sensing technology plays a major role in the way people are diagnosed and treated in hospitals. Exploring these technologies and the data analysis behind them enhances their current use and allows for insight into their potential future development. This module will cover: the different types of medical imaging (such as MRI, CT, PET, ultrasound and optical imaging), the fundamental principles of these techniques, their uses and limitations in a clinical setting. We further study applicable data treatment and signal processing techniques, including how to program these.</p>			
Pre-requisite(s):	Before taking this module you must pass MT5756		
Learning and teaching methods of delivery:	Weekly contact: 2 sessions per week of 2.5 hours each which include lectures and guided practical classes (X11 weeks)		
Assessment pattern:	2-hour Written Examination = 60%, Coursework = 40%		
Re-assessment pattern:	Oral Examination with results capped at grade 7 = 100%		
Module coordinator:	Dr M Mazilu		
Module teaching staff:	Dr M Mazilu, Dr A Gillies, Dr P Cruickshank (TBC)		