MODULE TITLE	**Data Science and Modelling Dissertation**	**CREDIT VALUE**	**60**
MODULE CODE	**MTHM603**	**MODULE CONVENER**	**Dr Markus Mueller (Coordinator)**

DURATION: TERM	**1**	**2**	**3**
DURATION: WEEKS		**5**	**12**

Number of Students Taking Module (anticipated)	**20**

DESCRIPTION - summary of the module content

This module offers the ideal opportunity to develop a deep understanding of data science approaches to your specialism area. There will be supervision from experts in data science and modelling and from experts in your chosen science and technology area. You will apply your technical and application specific skills and knowledge to undertake original and interdisciplinary research within data science and modelling. The project will require understanding of the setting, a critical review of possible approaches, choice of appropriate methodology, an extended piece of data analysis or modelling work and a clear and concise summary of the background, data, methodology, results and conclusions. You will communicate your findings to your peers and for assessment through a dissertation, presentation and other digital media.

AIMS - intentions of the module

This module aims to give you in-depth experience of applying Data Science and Modelling approaches to real-world problems, preparing you for work in a business/industrial/governmental/NGO setting or for further post-graduate study/research. The module aims to build on the knowledge and skills you have acquired in the taught modules of the programme through an investigation of an area of particular interest to you. It aims to give you experience of many aspects of research work, including problem formulation, literature review, planning, tool development, experimentation, analysis, interpretation and presentation of results.

INTENDED LEARNING OUTCOMES (ILOs) (see assessment section below for how ILOs will be assessed)

Module Specific Skills and Knowledge:	
1	Demonstrate knowledge of a research topic of relevance to applied data science and modelling, acquired through a deep and self-motivated exploration of that topic;
2	Design and follow systematically the phases of research project development;
3	Apply sophisticated and appropriate analysis and development techniques at each stage of a project;
Discipline Specific Skills and Knowledge:	
4	Show familiarity with the background and context of an application area;
5	Apply methods and tools learnt in the context of other fields to the application in question;
6	Produce full documentation as appropriate to the system and research;
Personal and Key Transferable/ Employment Skills and Knowledge:	
7	Conduct independent study, including library and web-based research;
8	Plan an extended project, demonstrate independent research, and manage time effectively;
9	Present and communicate work to a non-specialist audience;
10	Technical and scientific report writing and presentation.

SYLLABUS PLAN - summary of the structure and academic content of the module

Not applicable.

LEARNING AND TEACHING

LEARNING ACTIVITIES AND TEACHING METHODS (given in hours of study time)

Scheduled Learning & Teaching Activities	20.00	**Guided Independent Study**	580.00	**Placement / Study Abroad**	

DETAILS OF LEARNING ACTIVITIES AND TEACHING METHODS

Category	Hours of study time	Description
Scheduled Learning and Teaching Activities	20	Project supervision
Guided Independent Study	580	Individual assessed work

ASSESSMENT

FORMATIVE ASSESSMENT - for feedback and development purposes; does not count towards module grade

Form of Assessment	Size of the assessment e.g. duration/length	ILOs assessed	Feedback method
Two-page project proposal in early stages of project	2 pages	All	Oral
Draft dissertation	10+ pages	All	Written and/or oral

SUMMATIVE ASSESSMENT (% of credit)

Coursework	100	**Written Exams**	0	**Practical Exams**	0

DETAILS OF SUMMATIVE ASSESSMENT

Form of Assessment	% of credit	Size of the assessment e.g. duration/length	ILOs assessed	Feedback method
Mid-Point Report	15	2,000 words (or equivalent)	1-4, 7-10	Written and oral
Final Presentation	15	15 minutes	1, 4, 9	Written and oral
Dissertation	70	15,000 words (or equivalent)	All	Written

DETAILS OF RE-ASSESSMENT (where required by referral or deferral)

Original form of assessment	Form of re-assessment	ILOs re-assessed	Time scale for re-assessment
Mid-Point Report	Coursework (100%)	1-4, 7-10	To be agreed by consequences of failure meeting
Final Presentation	Coursework (100%)	1, 4, 9	To be agreed by consequences of failure meeting

Dissertation	Coursework (100%)	All	To be agreed by consequences of failure meeting

RE-ASSESSMENT NOTES

Deferral – if you miss an assessment for certificated reasons judged acceptable by the Mitigation Committee, you will normally be either deferred in the assessment or an extension may be granted. The mark given for a re-assessment taken as a result of deferral will not be capped and will be treated as it would be if it were your first attempt at the assessment.
Referral – if you have failed the module overall (i.e. a final overall module mark of less than 50%) you will be required to resubmit the original assessment as necessary. The mark given for a re-assessment taken as a result of referral will be capped at 50%.

RESOURCES

INDICATIVE LEARNING RESOURCES - The following list is offered as an indication of the type & level of information that you are expected to consult. Further guidance will be provided by the Module Convener

Basic reading:
Subject to project topic
Web-based and electronic resources:
ELE – *College to provide hyperlink to appropriate pages*
Other resources:
Subject to project topic
Reading list for this module:
There are currently no reading list entries found for this module.

CREDIT VALUE	60	**ECTS VALUE**	30
PRE-REQUISITE MODULES	None		
CO-REQUISITE MODULES	None		
NQF LEVEL (FHEQ)	7	**AVAILABLE AS DISTANCE LEARNING**	No
ORIGIN DATE	Monday 14 December 2020	**LAST REVISION DATE**	Friday 18 June 2021
KEY WORDS SEARCH	Research; Literature review; Data collection; Data analysis; Modelling; Simulation		