ST5001: Statistics for Artificial Intelligence

Module Details

Title Short:	Statistics for Artificial Intelligence APPROVED
Language of Instruction:	English

Module Code:	ST5001

ECTS Credits:	5

NFQ Level:	9	**EQF Level:**	7	**EHEA Level:**	Second Cycle

Valid From:	2021-22 (01-09-21 – 31-08-22)

Teaching Period:	Semester 1

Module Delivered in	1 programme(s)

Module Owner:	JOHN NEWELL

Module Discipline:	MA_ST_AM - School of Mathematics, Statistics and Applied Mathematics

Module Level:	Continuous Calculator (M.Sc.) (PG Dip)

Module Data:	1 - 4 NON LAB

Module Description:	This module provides students with an introduction to Statistics and the use of statistical modelling in the domain of Artificial Intelligence (AI). The course will start with a discussion of the overlap and differences between Data Science, Statistics, Machine Learning and Statistical Learning. The critical role of probability as a data generating mechanism will be explored with particular emphasis on the Binomial, Poisson, Exponential and Normal distributions. The key role of study design and the methods for parameter estimation and uncertainty using classical and computational approaches will be covered in detail. The remainder of the course will involve the use of statistical modelling in experimental and observational studies, small and large, in a wide variety of contexts by fitting and interpreting relevant statistical models in R.

Learning Outcomes	
On successful completion of this module the learner will be able to:	
LO1	Demonstrate the use of probability as a data generating mechanism.
LO2	Present data in a visually compelling manner with an emphasis on best practice for communication.
LO3	Apply modern statistical modelling techniques to analyse complex study designs using R.
LO4	Compile a statistical report using the principles of reproducible research.

Module Content & Assessment

Indicative Content
No indicative content

Written Assessment

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Marks Out of*	*Pass Marks*	*Sitting*	*Assessment Period*	*Assessment Date*	*Duration*	*Mandatory*
Paper 1 - Written	n/a	1,2,3,4	70	100	40	First Sitting	Semester 1	n/a	2:00	True
Assessment is marked as bondable but has no matching assessments										
Paper 1 - Written	n/a	1,2,3,4	70	100	40	Second Sitting	Autumn	n/a	2:00	True
Assessment is marked as bondable but has no matching assessments										

Continuous Assessment

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Marks Out of*	*Pass Marks*	*Sitting*	*Assessment Period*	*Assessment Date*	*Duration*	*Mandatory*
Continuous Assessment 1	n/a	1,2,3,4	30	100	0	First Sitting	Semester 1	n/a	0	True
Continuous Assessment 1	Carried Forward from first sitting.	1,2,3,4	30	100	40	Second Sitting	Autumn	n/a	0	True

No Oral, Audio Visual or Practical Assessment

No Department-based Assessment

No Research

No Study Abroad

No Computer-based Assessment

The institute reserves the right to alter the nature and timings of assessment

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Module Workload

Workload: Full Time					
Workload Type	*WorkLoad Description*	*Learning Outcomes*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	Two 1 hour lectures per week.	1,2,3,4	24	Per Semester	2.00
Tutorial	One 1 hour tutorial per week from Week 2.	1,2,3,4	11	Per Semester	0.92
Independent Learning	No Description	1,2,3,4	85	Per Semester	7.08
				Total Hours	120.00
				Total Weekly Learner Workload	10.00
				Total Weekly Contact Hours	2.92

This module has no Part Time workload.

Module Resources

This module does not have any book resources
This module does not have any article/paper resources
This module does not have any other resources

Module Full Time Equivalent

Module Full Time Equivalent	
Discipline	*%*
School of Mathematics, Statistics and Applied Mathematics	100

Module Delivered in

Course Stream Code	*Course Stream Title*
MAO2	MAO2 Master of Science in Computer Science – Artificial Intelligence –Online (Approved)

Module Instructors

Module Instructors	
Staff Member	*Staff Email*
No Teacher Staff Assigned	