DATAH3008: Data Analysis

Short Title:	Data Analysis APPROVED
Full Title:	Data Analysis
Language of Instruction:	English

Module Code:	DATAH3008

Credits:	5

Field of Study:	Computer Science

Module Delivered in	9 programme(s)

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Module Description:	An introduction to the field of data analysis, including its positioning in the wider world and the main methods and concepts of both its statistics and machine learning disciplinary facets

Learning Outcomes	
On successful completion of this module the learner will be able to:	
LO1	Prepare data for analysis, including cleaning, transforming and imputing missing values, using standard methods and tools.
LO2	Apply numeric and visual methods of exploratory data analysis, including data summarisation and investigation of relationships.
LO3	Perform tests for the evaluation and comparison of data sets and their characteristics and apply methods for the evaluation of predictions.
LO4	Explain the difference and relationship between statistics and machine learning and how elements of analysis covered in the module support statistical inference and machine learning.

Module Content & Assessment

Course Work				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Assignment	The student is required to prepare a data set and perform exploratory analysis on it by following prescribed steps and techniques and by means of a prescribed programming language.	1,2	20.00	Week 24
Assignment	The student is required to work independently to answer a number of questions posed about a given data set. This will include choosing and then applying data preparation, analysis and visualisation methods and techniques and the writing of a short report.	1,2,3	30.00	Sem 2 End

End of Module Formal Examination				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	n/a		50.00	End-of-Semester

TU Dublin – Tallaght Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time				
Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	Lecture	2.00	Every Week	2.00
Lab	Lab	2.00	Every Week	2.00
Independent Learning	Independent learning	4.00	Every Week	4.00
			Total Weekly Learner Workload	8.00
			Total Weekly Contact Hours	4.00

Workload: Part Time				
Workload Type	*Workload Description*	*Hours*	*Frequency*	*Average Weekly Learner Workload*
Lecture	Lecture	2.00	Every Second Week	1.00
Lab	Lab	2.00	Every Second Week	1.00
Independent Learning	Independent learning	6.00	Every Week	6.00
			Total Weekly Learner Workload	8.00
			Total Weekly Contact Hours	2.00

Module Resources

Required Book Resources
GLENN J. MYATT, WAYNE P. JOHNSON 2014, *MAKING SENSE OF DATA I A Practical Guide to Exploratory Data Analysis and Data Mining*, 1 Ed., 1-6, Wiley Hoboken, New Jersey [ISBN: 9781118407417]
This module does not have any article/paper resources
This module does not have any other resources

Module Delivered in

Programme Code	Programme	Semester	Delivery
TA_KACTM_B	Bachelor of Science (Honours) in Computing with Information Technology Management	5	Elective
TA_KACOS_B	Bachelor of Science (Honours) in Computing with Software Development	5	Elective
TA_KACOD_B	Bachelor of Science (Hons) in Computing with Data Analytics	5	Mandatory
TA_KACTM_D	Bachelor of Science in Computing with Information Technology Management	5	Elective
TA_KACOS_D	Bachelor of Science in Computing with Software Development	5	Elective
TA_KCOSD_D	Bachelor of Science in Computing with Software Development - Year 3 (Add on)	5	Elective
TA_KITMG_D	Bachelor of Science in IT Management	5	Elective
TA_BDAMKT_D	BSc in Data Analytics with Digital Marketing	1	Mandatory
TA_KCOMP_HD	Higher Diploma in Science in Computing	1	Elective