

Short Title:	Data Administration and Analysis APPROVED
Full Title:	Data Administration and Analysis
Module Code:	DATA H2001
Credits:	5
Field of Study:	Computer Science
Module Delivered in	8 programme(s)
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Module Description:	The aim of the module is to: Equip the student with the skills and know-how to carry out common database administration tasks and to introduce the students to data analysis techniques.

Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Demonstrate an understanding the architecture of industry strength database environment and compare to an RDS in the cloud.
LO2	Configure and extend the database memory and storage structures for particular business and technical requirements including mangement of user schemas, roles, privileges, backup and recovery.
LO3	Analyse data using excel to include cleaning moving and manipulating of data (mean,median,mode, Standard Deviation, data imputation, graphing for outliers),Simple analysis of the data (Descriptive, exploritory and inferential) using Python (Mathplotlib, numpy, Pandas) or similar.
LO4	Visualize the data, overview of google analytics and visualization of data sets using Power BI or similar.
LO5	Understand the governance theory of data.

Module Content & Assessment

Course Work				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Practical/Skills Evaluation	Individual Sample Practical 1 Implement and configure and Oracle Database environment given a set of requirements e.g. in relation to tablespaces, datafiles, undo requirements, control files, database buffer cache, user admin	1,2	20.00	Week 22
Continuous Assessment	Sample Practical 2 – Students will be given a set of raw data and a business problem. The task will be to prepare the data, analyse and visualize this data as they see fit to address the given business need.	3,4	25.00	Week 28
Practical/Skills Evaluation	The student will complete weekly practical work which will be assessed	1,2,3,4,5	15.00	Ongoing

End of Module Formal Examination				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Formal Exam	End-of-Semester Final Examination	1,2,3,4,5	40.00	End-of-Semester

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

Module Workload

Workload: Full Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Class Based Instruction	2.00	Every Week	2.00
Laboratories	Practicals/Workshops	2.00	Every Week	2.00
Independent Learning	ReadingStudy	3.00	Every Week	3.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

Workload: Part Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Lecture Lab	4.00	Every Second Week	2.00
Other	workshops	4.00	Twice per semester	0.53
Total Weekly Learner Workload				2.53
Total Weekly Contact Hours				2.00

Module Resources

Required Book Resources

Wilfried Lemahieu, Seppe vanden Broucke, Bart Baesens 2018, *Principles of Database Management: The Practical Guide to Storing, Managing and Analyzing Big and Small Data*, 1st Edition Ed., Cambridge University Press (31 Aug. 2018) [ISBN: 1107186129]

Wes McKinney 2017, *Python for Data Analysis*, O'Reilly Media [ISBN: 9781491957660]

Recommended Book Resources

Darl Kuhn 2013, *Pro Oracle Database 12c Administration (Expert's Voice in Oracle)*, Apress [ISBN: 9781430257288]

Ramez Elmasri, Shamkrant Navathe 2014, *Fundamentals of Database Systems*, 6 Ed., Pearson [ISBN: 9781292025605]

Thomas M. Connolly, Carolyn E. Begg 2014, *Database Systems: A Practical Approach to Design, Implementation and Management*, 6th Ed., Addison Wesley [ISBN: 9781292061184]

This module does not have any article/paper resources

Other Resources

Website, Software: Oracle Academy Membership Resources [Oracle Academy Membership Resources](#)

Module Delivered in

Programme Code	Programme	Semester	Delivery
TA_KACTM_B	Bachelor of Science (Honours) in Computing with Information Technology Management	4	Mandatory
TA_KACOI_B	Bachelor of Science (Honours) in Computing with Language (French/ German/ Spanish)	4	Mandatory
TA_KACOS_B	Bachelor of Science (Honours) in Computing with Software Development	4	Mandatory
TA_KACOD_B	Bachelor of Science (Hons) in Computing with Data Analytics	4	Mandatory
TA_KACTM_D	Bachelor of Science in Computing with Information Technology Management	4	Mandatory
TA_KACOS_D	Bachelor of Science in Computing with Software Development	4	Mandatory
TA_KITMG_D	Bachelor of Science in IT Management	4	Mandatory
TA_KCOMP_C	Higher Certificate in Science in Computing	4	Mandatory