# H7AVB: Advanced Databases

Module Code:		/B					
Long Title		Advanced Databases APPROVED					
Title		Advanced Databases					
Module Level:		LEVEL 7					
EQF Level:		6					
EHEA Level:		First Cycle					
Credits:		5					
Module Coordinator:		ICHAEL BRADFORD					
Module Author:		CHAEL BRADFORD					
Departments:		School of Computing					
Specifications of the qualifications and experience required of staff							
Learning Outcomes							
On successful co	mpletion of this modu	ile the learner will be able to:					
#	Learning Outcome	Description					
L01	Examine the theory,	concepts, technical issues and application of database systems					
LO2	Describe the IR para	adigm and apply classic information retrieval models					
LO3	Illustrate Transaction	ction Management in a DBMS					
LO4	Examine the Data W	Varehouse concept and its main features					
LO5	Identify current trend	s and developments in databases and utilise current database technologies					
Dependencies							
Module Recommendations							
No recommendations listed							
Co-requisite Modules							
No Co-requisite modules listed							
Entry requirements							

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Module Content & Assessr	nent							
Indicative Content								
Transaction Management <ul> <li>Transaction Support.</li> <li>Concurrency Control.</li> <li>Database Recovery.</li> <li>Transaction Management using SQL</li> <li>Programming language support for transaction management</li> </ul>								
Query Optimisation • RDBMS File Management. • Tuning at the Internal Level e.g. Query Optimisation using SQL, Query Processing, Query tree, query plans, measures of query cost etc.								
Distributed Databases  Introduction to Distributed Data • DDBMS Characteristics. • Distributed Processing Vs. Parallel Processing Functions. • Architecture of a DDBMS Transparencies in a DDBMS Distributed Relational Database • Design Types of DDBMS								
Database Security  Introduction to Database Security.  Threats and Countermeasures Security in DBMSs.  DBMSs and Web Security								
Data Warehousing  Introduction to Data Warehousing. • Data Warehousing Concepts. • Types of Data Warehouse. • Designing a Data Warehouse. • Database Online. • Analytical Processing. • Data-mining Challenges of Data Warehousing								
Non-relational Databases • Types of non-relational databases. • Storing and retrieving information. • Algorithmic based queries. • Distributed data storage. • Cloud-based data storage								
Information Retrieval • Retrieval versus Filtering. • A Taxonomy of Information Retrieval Models. • A Formal Characterisation of Information Retrieval Models. • Boolean Model. • Vector Model. • Probabilistic model. • Information Retrieval Systems								
Teaching methodology The learning strategy involves the use of lectures, tutorials, practicals case studies and class discussions as appropriate.								
Assessment Breakdown			%					
Coursework			50.00%					
End of Module Assessment			50.00%					
ssessments								
ull Time								
Coursework								
Assessment Type:	Continuous Assessment (0200)	% of total:	50					
Assessment Date:	n/a	Outcome addressed:	2,3,5					
Non-Marked:	No							
Assessment Description: Sample CA – Research Report. you are expected to carry out research on a number of Databases. You should pick AT LEAST TWO databases and compare these in your report. This assignment should compare and contrast the Transaction Management techniques of concurrency and recovery of two Databases of your choice. The analysis should be approached from a business and Technical perspective. The report should be a MAXIMUM of 3000 words - approx 6 PAGES								
End of Module Assessment								
Assessment Type:	Terminal Exam	% of total:	50					
Assessment Date:	End-of-Semester	Outcome addressed:	1,2,3,4,5					
Non-Marked:	No							
Assessment Description: End-of-Semester Final Examinatio	n							
No Workplace Assessment								
Reassessment Requirement								
Repeat examination Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.								

# H7AVB: Advanced Databases

Module Workload										
Module Target Workload Hours 0 Hours										
Workload: Full Time										
Workload Type	Workload Description		Hours	Frequency	Average Weekly Learner Workload					
Lecture	No Description		2	Every Week	2.00					
Tutorial	No Description		1	Every Week	1.00					
Independent Learning	No Description		7.5	Every Week	7.50					
Total Weekly Contact Hours										
Workload: Part Time										
Workload Type	Workload Description		Hours	Frequency	Average Weekly Learner Workload					
Lecture	No Description		2	Every Week	2.00					
Tutorial	No Description		1	Every Week	1.00					
Independent Learning	No Description		7.5	Every Week	7.50					
Total Weekly Contact Hours										

### Module Resources

Recommended Book Resources

Thomas Connolly, Carolyn Begg. (2014), Database Systems: A Practical Approach to Design, Implementation, and Management, 6th. Pearson Education, [ISBN: 1292061189].

### Supplementary Book Resources

Manning C., Raghaven, P., & Schutze, H. (2008), Introduction to Information Retrieval,, , Cambridge University Press.

C. J. Date. (2004), An introduction to database systems, Pearson/Addison Wesley, New York, [ISBN: 0321197844].

Eric Redmond, Jim Wilson. Seven Databases in Seven Weeks, Pragmatic Bookshelf, p.330, [ISBN: 1934356921].

### This module does not have any article/paper resources

This module does not have any other resources

Discussion Note: