



MODULE SPECIFICATION

Part 1: Information			
Module Title	Advanced Databases		
Module Code	UFCFU3-15-3	Level	Level 6
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Contributes towards			
Module type:	Standard		
Pre-requisites	Introduction to OO Systems Development 2018-19, Web Programming 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Overview: Pre-requisites: students must take one out of UFCFB3-30-1 Web Programming or UFCFC3-30-1 Introduction to OO Systems</p> <p>Educational Aims: During this module, students will be given the opportunity to build upon their existing experiences within database modelling and design by examining the latest database paradigms and associated research. A recurrent thread throughout the module will be the examination of how increasing data complexity and heterogeneity requires the development and implementation of ever more agile and complex representations for data storage, management, and retrieval. The database paradigms that will be examined will be chosen to explore these themes.</p> <p>In addition the educational experience may explore, develop, and practise but not formally discretely assess the following: Presentation activity, working as a team member</p> <p>Outline Syllabus: Indicative module content will include:</p>

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Weaknesses of the standard relational paradigm – application domains and complexity, OO response
 Data models in advanced applications
 Object-Oriented Database concepts and development – object-data model, critical appraisal of ODM advantages and disadvantages
 Hybrid or Object-Relational database concepts and development – SQL extensions etc
 Database design and development – intelligent databases and knowledgebase management systems, intelligent data-mining
 Temporal databases – temporal data and data models, valid and transaction time, bi-temporality, SQL time support
 Spatial databases
 Distributed and Parallel databases – parallelization concepts and applications, shared memory architectures, shared disk architectures, shared nothing architectures, NUMA and cluster architectures
 Databases and the internet

Module content will remain under continued revision and scrutiny due to the researched orientation of the fields in question

Teaching and Learning Methods: Scheduled learning:

The main material in the module will be introduced in lectures. This theoretical exposure to the material will then be supplemented by practical lab sessions using ObjectStore, an industry-standard OODBMS that exhibits many of the features that characterise aspects of advanced database development. The lectures will also be supplemented by tutorials in which research papers will be examined and discussed, and selectively reviewed in the form of student-driven presentations.

Independent learning:

In addition, students will be expected to develop independent learning approaches through directed reading and study, and presentation development.

Part 3: Assessment

The assessment strategy comprises TWO parts:

Written examination (3 hours) comprising material relating directly to all topics covered in lectures and thus to all learning outcomes

Coursework elaborating and extending experiences gained in laboratory sessions

First Sit Components	Final Assessment	Element weighting	Description
Written Assignment - Component B		50 %	Coursework based on the lab experiences.
Examination - Component A	✓	50 %	Exam (3 hours)
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Examination - Component A	✓	50 %	Exam (3 hours)

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Part 4: Teaching and Learning Methods															
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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p>https://uwe.rl.talis.com/modules/ufcfu3-15-3.html</p>														