

Session: 2022/23

Last modified: 21/07/2022 16:35:36

Title of Module: Database Design			
Code: COMP11007	SCQF Level: 11 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Junkang Feng		
Summary of Module			
<p>The module begins with the notion of the database approach to data management against the background of structured and unstructured data and the phenomena dubbed 'data universe explosion'. Then the life cycle of database development is outlined. Database conceptual design using the entity-relationship (ER) data model is examined in a great detail. The relational data model and the theory that support its definition and manipulation are then explained. The most popular technology for managing structured data is the relational database management system (RDBMS). Common functionalities and utilities of RDBMS are looked at through laboratory practicals. Furthermore, the process of mapping a conceptual design in ER to a relational schema is covered in detail. To create a relational database that is free from certain types of operational anomalies, the concept of normalisation and the most commonly used normal forms for relational databases are discussed and practised on. Issues in physical design when implementing a relational database are then examined. The industry standard query language for relational databases is the Structured Query Language (SQL), which is covered in detail.</p> <p>Therefore through this module the student will learn knowledge of solid theoretical foundations and gain practical skills for the design and implementation of relational databases. During the course of this module students will develop their UWS Graduate Attributes (https://www.uws.ac.uk/current-students/your-graduate-attributes/). Universal: Academic attributes - critical thinking and analytical & inquiring mind; Work-Ready: Academic attributes - knowledge and skills for Database Design; Successful: autonomous, driven and resilient.</p>			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
		✓	✓		
<p>Face-To-Face Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.</p> <p>Blended A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations</p> <p>Fully Online Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.</p> <p>HybridC Online with mandatory face-to-face learning on Campus</p> <p>HybridO Online with optional face-to-face learning on Campus</p> <p>Work-based Learning Learning activities where the main location for the learning experience is in the workplace.</p>					

Campus(es) for Module Delivery						
The module will normally be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓					✓	
Term(s) for Module Delivery						
(Provided viable student numbers permit).						
Term 1	✓	Term 2	✓	Term 3		

Learning Outcomes: (maximum of 5 statements)	
On successful completion of this module the student will be able to: L1. Demonstrate good understanding of the database approach to data management; L2. Demonstrate an extensive understanding of data modeling concepts and methodologies for relational database design; L3. Demonstrate the ability to design and implement relational database systems; L4. Use SQL to define and manipulate data stored in a relational database.	
Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	SCQF Level 11. Critical understanding of the concepts of the Relational model and the theory that supports it. Extensive, detailed knowledge and understanding of the concepts of the Entity-Relationship model and the database design process.
Practice: Applied Knowledge and Understanding	SCQF Level 11. Critically analyzing a database data requirements and using database design techniques to design and implement a relational database. Using SQL to retrieve, interpret and manipulate data in a relational database.
Generic Cognitive skills	SCQF Level 11. Bringing together information from a variety of sources; Dealing with complex design, implementation and data manipulation issues and make informed judgment.
Autonomy, Accountability and Working with others	SCQF Level 11. Working with others in groups or teams and demonstrate leadership where appropriate; Systematically practice in ways that addresses their own learning needs and reflects on own and others' roles and responsibilities.

Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	Module Title:
	Other:	
Co-requisites	Module Code:	Module Title:

* Indicates that module descriptor is not published.

Learning and Teaching	
<p>Lectures will be used for exposition of topics, provide context and suggest appropriate background material. Lab sessions will provide practical experience in selected topics, and tutorials will provide time for working on exercises, and discussing directed further reading and feedback on the student' perspective on the topics.</p> <p>Independent study hours consists of two parts: Coursework (42 hours) and self study (120 hours)</p>	
<p>Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:</p>	<p>Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)</p>
Lecture/Core Content Delivery	20
Tutorial/Synchronous Support Activity	8
Laboratory/Practical Demonstration/Workshop	20
Independent Study	152
	200 Hours Total
**Indicative Resources: (eg. Core text, journals, internet access)	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Lecture Notes and lab sheets;</p> <p>'Database Systems', 6th ed., Connolly T.M., and Begg C.E., Addison Wesley, 2015.</p> <p>'Modern Database Management', 11th Edition Jeffrey A. Hoffer, Mary B. Prescott, Fred R. McFadden, 2013.</p> <p>'Fundamentals of Database Systems', 5th Ed., Elmasri R., and Navathe S.B., Benjamin Cummings, 2007.</p> <p>'An Introduction to Database Systems', Date, C.J., Addison Wesley, 2003.</p> <p>Hardware and Software: PC, MS Access 2013/2016.</p>	
<p>(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)</p>	

Engagement Requirements
In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: Academic engagement procedure

Supplemental Information

Programme Board	Computing
Assessment Results (Pass/Fail)	No
Subject Panel	Business & Applied Computing
Moderator	Carolyn Begg
External Examiner	C Luo
Accreditation Details	Not applicable
Version Number	2.13

Assessment: (also refer to Assessment Outcomes Grids below)
coursework assignment worth 60% of the final mark (Two assessments worth 20% and 40% respectively)
Two Class tests worth 15% and 25% respectively of the final mark
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours	
Dissertation/ Project report/ Thesis		✓	✓	✓	60	0	
Component 2							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours	

Class test (written)	✓	✓	✓		40	3	
Combined Total For All Components					100%	3 hours	

Footnotes

A. Referred to within Assessment Section above

B. Identified in the Learning Outcome Section above

<p>Note(s):</p> <ol style="list-style-type: none"> 1. More than one assessment method can be used to assess individual learning outcomes. 2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note). This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity
<p>This module is appropriate for any student. Any special needs will be catered for and coordinated by the School and the School's Enabling Support Co-coordinators. <u>UWS Equality and Diversity Policy</u></p>
<p>(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)</p>