Xi'an Jiaotong-Liverpool University
西交利物浦大学

MODULE SPECIFICATION

Module Title	Database Development and Design
Module Code	CPT201
Originating Department	Department of Computing
Module Level[1]	2 (FHEQ level 5)
Module Credits *(normally 5)*	5
Pre-requisites *(including Year 1)*	CSE103 OR CPT103
Shared Programme(s) *(please name all)*	BSc Bioinformatics BSc Information and Computing Science BSc Information Management and Information Systems

Mode of Delivery and Hours

	Lectures	**Seminars**	**Tutorials**	**Lab / Practicals**	**Fieldwork / Placement**	**Other** *(Private study)*	**Total**
Hours / Semester	39		13			98	150
Delivery Pattern	2+1		1				

Description

Aims and Fit of Module*(i.e. relationship to programme)*
• To introduce students to the problems arising from concurrency in databases, and how they are solved; • To introduce students to the problems arising from the integration of heterogeneous sources of information and the use of semi-structured data; • To introduce students to non-relational databases; • To introduce students to techniques for analyzing large amounts of data.
Learning Outcomes*(for accreditation and other reasons,sub-headings could be added to this section)* *Students completing the module successfully should be able to:*
At the conclusion of this module students should be able to • identify and apply the principles underpinning transaction management within DBMS; • demonstrate an understanding of advanced SQL topics; • illustrate the issues related to Web technologies and DBMS and XML as a semi-structured data representation formalism;

• identify the principles underlying object relational models; • state the main concepts in data warehousing and data mining.
Method of Teaching and Learning
Students will be expected to attend three hours of formal lectures as well as to participate in one hour of supervised practical classes in a typical week. In addition, students will be expected to devote six hours of unsupervised time for reflection and consideration of lecture material and background reading.
Syllabus
1. Advanced SQL: Triggers, Indexes (3 lectures); 2. Query Optimization (12 lectures); 3. Transaction Management (12 lectures); 4. Object Relational Databases (3 lectures); 5. Distributed Databases (3 lectures); 6. Web Technologies & DBMS (3 lectures); 7. Data Warehousing and Data Mining (6 lectures).

Assessment

Initial Assessment

Sequence	Method	Assessment Type(EXAM or CW)[2]	Learning outcomes assessed*(use codes under Learning Outcomes)*	Duration	Week	% of Final Mark	Resit(Y/N/S)[3]
001	Online Open Book Exam	EXAM	ALL	2.0 hours		100	S

Resit Assessment

Sequence	Assessment Type (EXAM or CW)	Learning outcomes assessed *(use codes under Learning Outcomes)*	Duration	Week	% of Final Mark
R001	EXAM	ALL	2.0 hours		100

The resit exam will assess all of the learning outcomes of the module, and will be weighted as 100% of the final module mark. Other components of the assessment, regardless of whether or not the student passed or failed, will not be included in the calculation of the final module mark, following resit examinations.

Textbooks[4]

Mandatory Textbooks

Title	Author	ISBN/Publisher
DATABASE SYSTEM CONCEPTS, 6TH ED	A. SILBERSCHATZ H. F. KORTH S. SUDARSHAN	9780073523323 /MCGRAW-HILL EDUCATION

Optional Textbooks

Title	Author	ISBN/Publisher

Reference Textbooks

Title	Author	ISBN/Publisher
DATABASE SYSTEMS: THE COMPLETE BOOK, 2ND ED	HECTOR GARCIA-MOLINA, JEFFREY D. ULLMAN, JENNIFER WIDOM	9780131873254 /PEARSON
DATABASE SYSTEMS: A PRACTICAL APPROACH TO DESIGN, IMPLEMENTATION, AND MANAGEMENT (6TH EDITION)	THOMAS CONNOLLY, CAROLYN BEGG	9780132943260 /PEARSON

[1]Undergraduate programmes Year 1/Level 0 is equivalent to FHEQ Level 3, Year 2/Level 1 is equivalent to FHEQ Level 4, Year 3/Level 2 is equivalent to FHEQ Level 5, Year 4/Level 3 is equivalent to FHEQ Level 6, and Master programme Level 4 is equivalent to FHEQ Level 7. FHEQ stands for "The Frameworks for HE Qualifications of UK Degree-Awarding Bodies". It applies to degrees, diplomas, certificates and other academic awards (other than honorary degrees and higher doctorates) granted by a higher education provider in the exercise of its degree awarding powers. FHEQ is an important reference point for providers of higher education. These are numbered 4-8, succeeding levels 1-3 which precede higher education in "The National Qualifications Framework and The Qualifications and Credit Framework (NQF/QCF)". For more information please refer to: https://www.qaa.ac.uk/quality-code/qualifications-and-credit-frameworks.

[2]Examination (EXAM) is an assessment task formally scheduled and supervised by the University which takes place over a specified period, in a specified location and at a specified time, e.g. mid-term, final, resit etc. Coursework or continuously assessed work (CW) is different than EXAM; it is undertaken throughout the semester organized by the department.

[3]"Y" means that the corresponding resit is an independent assessment covering the same learning outcomes, in the same assessment type and bearing the same weighting with the original assessment; "N" means there is no resit opportunity for the particular component; "S" means there will be a single resit that will be designed to assess all learning outcomes of the module, and will be weighted as 100% of the final module mark, disregarding any marks achieved at the original assessment.

[4]Mandatory: every student will be charged for a copy of the text, whether or not they collect it
Optional: the Library will purchase a number of copies for students to purchase if they wish
Reference: the Library will add a couple of copies to their collection
Textbooks are subject to change until the final procurement complete.