

Liverpool John Moores University

Title: DATABASE DESIGN AND IMPLEMENTATION
Status: Definitive
Code: **4542NCCG** (129504)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Nelson Campus

Team	Leader
Silvester Czanner	Y
Robert Askwith	

Academic Level: FHEQ4 **Credit Value:** 20 **Total Delivered Hours:** 60
Total Learning Hours: 200 **Private Study:** 140

Delivery Options

Course typically offered: S1, S2 and NS2 (S2 for Jan)

Component	Contact Hours
Lecture	60

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Assignment	Assignment	100	

Competency	NCC Group Pass/Fail
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Aims

The aim of this module is to give students opportunities to develop an understanding of the concepts and issues relating to database design and development, as well as to provide the practical skills to translate that understanding into the design and creation of complex databases.

Learning Outcomes

After completing the module the student should be able to:

- 1 Use an appropriate design tool to design a relational database system for a substantial problem.
- 2 Develop a functional relational database system, based on an existing system design.
- 3 Test the system against user and system requirements
- 4 Produce technical and user documentation.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Assignment	3	4
NCC Group Pass/Fail	1	2

Outline Syllabus

The role of database systems

Determining user and system requirements.

Design tools and techniques for a relational database system.

Logical design for relational databases

Data integrity, data validation, data security and data controls.

Overview of object-oriented databases and their design tools

Software development options for developing the relational database system.

Implementation of a physical data model based on the logical model.

Data stores, internal storage and external storage.

Implementation of security elements in databases.

Relational database validation

Data manipulation using appropriate query tools.

Database maintenance and data manipulation

System reports using report writing tools

Testing against designs and user and system requirements.

Functional and system testing

Technical and user documentation.

Learning Activities

Lectures

These will not normally be traditional didactic lectures in which the student plays little active part, but will be delivered in small groups of up to 20 students in which their interaction with their tutor is a key ingredient of their learning experience.

The material of this module requires the development of significant practical skill. This will be taught within the lecture time, making these sessions a blend of lecture and workshop time. The sessions will be timetabled in spaces with physical

resources appropriate to the delivered content.

Students will receive approximately 30 hours of taught material, supported by in-class exercises and discussions designed to help student assimilate learning and to provide early informal feedback on their progress.

Practical Work

This module contains directed practical work that students will undertake under the supervision of teaching staff and/or technicians. Some elements of this practical work will form part of the assessment for this module.

Independent Study

Students are expected to undertake personal reading and research into topic areas that have been stimulated from the lectures and seminars. This reading will enhance their academic work and enable valid contribution to lectures and seminars.

VLE support

This will provide links to academic web-sites and on-line journals, facilitate group discussion outside of the classroom, access to outline lecture notes, and provide students with assessment details.

Notes

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