

TITLE: Fundamentals of Databases
CODE: CIF 102
CREDITS: 20
LEVEL: 1
SCHOOL: COMPUTING AND TECHNOLOGY
MODULE BOARD: IFS
PRE-REQUISITES: NONE
CO-REQUISITES: NONE
LEARNING HOURS: 200 the nature of which is specified in the module guide

LEARNING OUTCOMES

Upon successful completion of this module, students will be able to

1. Demonstrate an understanding of the concepts of data modelling and systems analysis in databases
2. Demonstrate an understanding of introductory SQL

and the ability to

3. Produce a data model for a simple problem and create and populate databases with more than one related table using both SQL and other methods provided by the software
4. Retrieve information effectively and efficiently in various ways (including QBE and SQL) and display it on a screen and in printed form

CONTENT SYNOPSIS

Students will be introduced to the concepts behind data modeling (e.g. entity modelling and normalization) and how to use this information to create a physical model. They will then explore methods for creating and populating a database design and methods for retrieving and displaying data from within that database

TEACHING AND LEARNING METHODS:

This module will be taught using a combination of lectures, practical sessions and self study.

Lectures 27 hours
Practicals 54 hours
Self Study 119 hours

ASSESSMENT METHODS

Summative assessment.

- a) Two tests, : TCT1 worth 30% to cover learning outcome 1, TCT2, worth 30%, to cover learning outcome 2.
- b) An individual assignment covering learning outcomes 3 and 4 to contribute 40% of final module mark.

INDICATIVE READING LIST

1. Connolly. M. & C.E. Begg, (2004) Database Solutions, Pearson Addison Wesley,
2. Warrender, R. (2003) Databases. Crucial
- 3 Leyk, M. and D. Deeks, (2002) An Introduction to Systems Analysis Techniques, 2nd Edition Addison and Wesley ISBN 0-13-857764

PROGRAMMES USING THIS MODULE AS CORE/OPTION:

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Franchised: ?

MODULE AUTHOR Lynne Humphries

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Supplementary Information

Module : Fundamentals of Databases

AMPLIFIED CONTENT

Students will be introduced to the terminology of the relational model, systems analysis and the importance of relational integrity. The database system development lifecycle will be discussed. Simple fact finding analysis techniques will be introduced and students shown how to use the information gained to develop a simple entity model with data attributes normalized to third normal form and primary and foreign keys correctly identified. Students will be given guidance on how to map that model onto relational database tables.

Using a commercially available database product like Microsoft Access or an Open Source database such as MySQL, students will then be given the chance to build simple relational databases using a variety of methods (e.g. SQL, wizards, etc). Students will go on to develop database functionality and a user interface using SQL and other tools offered by the chosen software package.

- READING LIST

- 1- Stobart, S. and M. Vassileiou (2004).PHP and MySQL Manual., Springer Professional Computing. ISBN: 1-85233-747-8
- 2 Bagui, S & Earp, R (2004) Learning SQL,, Pearson Addison Wesley
- 3 Connolly, M and C.E. Begg, Database Systems (2005) Addison Wesley

Relevant articles from current literature, and associated on-line resources, will be identified at the time of delivery.

SPECIALISED RESOURCE REQUIREMENTS

Standard CAT computing facilities.