

Module Outline

Lecturers

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Purpose of Module

To introduce the concepts relating to information systems in organisational usage and consider the different models of information systems.

To cover the fundamentals of databases, the process of database design, including data modelling, and in particular the entity relationship, and relational models.

To gain a sound practical understanding of the SQL relational query language, and an appreciation of non-relational database technology.

To understand the drivers for other database technologies and, to be aware of, and able to apply, a number of advanced database technologies.

Course Materials

Course materials are available on Vision <http://vision.hw.ac.uk>.

The first section of the module is also available at

<http://www.macs.hw.ac.uk/~trinder/DbInfSystems/>

Structure of Module

The first half of the module, weeks 1 - 6 will be led by Phil Trinder, followed by a study week. Weeks 8-12 will be led by Monica Farrow.

Week 1: Start PWT

Course Outline
Introduction to Information Systems

Week 2:

Database Fundamentals I
Database Fundamentals II
Database Design

Week 3:

ER-Modelling Tutorial
Relational Model I
Relational Model II

Week 4:

Relational Modelling Tutorial
Relational Model III
SQL I

Week 5:

SQL II
Relational Algebra Tutorial
SQL Practical I (Simple SQL)

Week 6:
READING WEEK
SQL Practical II (Create Database)
SQL Tutorial

Week 7:
SQL III
SQL Tutorial
SQL Practical III
(Query/Update Database)

Week 8: Start MF ~ 2 lectures per week, more info nearer the time
Database Connectivity
Other database models
JDBC Practical

Week 9:
XML motivation and syntax
Describing the format of an XML document

Week 10:
Transforming XML
XML Storage and Extraction
Lab support for XML assignment

Week 11:
Types of IS Systems
Data Warehousing

Week 12:
Revision

Coursework

There are two items of coursework for this module. Students will undertake an SQL practical project handed out in week 5 for submission by the end of week 7. The second item of coursework will cover XML. It will be given out in week 8 for submission at the end of week 11.

Recommended Texts

There are many good textbooks on relational databases. The primary text used in this course is Elmasri & Navathe. The first 3 titles on the list are restricted to week loans in the library.

Elmasri R. & Navathe S.B. “*Fundamentals of Database Systems*” Addison Wesley. Ideally 5th Edition.

** An excellent introductory text on database systems, good for revision and in-depth introduction to the topic.

Date C.J. “*An Introduction to Database Systems*” Any recent edition, Addison-Wesley, 1990 onwards.

** The “relational database bible”.

Connolly T and Begg C. “*Database Systems*” Any recent edition. Addison-Wesley

** A thorough introduction to database systems. Covers all of the material in this course, and more.

Avison D. & Shah, H. “*The Information Systems Development Life Cycle*” McGraw-Hill, 1997.

** An excellent introductory text to the topic of Information Systems.