Module Code	**CHI 2550**
Module Title	**MODERN DATABASE APPLICATIONS**

Module Scheme	School of Computing and Engineering, Undergraduate Scheme
School involved in delivery	Computing and Engineering
Name of Pathway(s)	BA (Hons) Computing in Business
	BSc(Hons) Business Computing [with specialism]
	BSc(Hons) Information Systems [with minor]
	BA(Hons) Computing in Society
	FdSc/BSc(Hons) Information and Communication Technology
	FdSc/BSc(Hons) Business Information Technology
Module Leader	David Brignell, Martyn Prigmore, Steve Wade
Location	Department of Multimedia and Information Systems
Module Status	Dedicated
Module Type	Compulsory
Module Rating	Honours, 20 credits
Learning Methods	Lectures and workshops 48 hrs
	Unsupervised, directed study 152 hours
	VLE (e.g. Blackboard) (e.g. Blackboard)
Pre-requisites	CFI2250 Developing Database Applications OR
	CII0220 Information Systems Development
Recommended Prior Study	None
Co-requisites	None
Professional Body Requirements	To be submitted for BCS accreditation once the courses using this module are established.

Module Aims

1. To develop students' understanding of the use of databases and database technology for managing information.
2. To consider non-relational data models and their supporting technologies.
3. To study approaches to database design using a variety of modelling techniques.
4. To facilitate the production of robust and effective information systems using non-relational database technologies.

Module Synopsis

The information needs of modern organisations require a more flexible approach to data management than that offered by traditional relational databases. Focusing on non-relational data models, this module introduces students to alternative approaches to modelling the information needs of an organization. It also provides students with an opportunity to use non-relational databases and database technologies to build robust and effective organizational information systems.

Outline Syllabus

As knowledge and technology changes, so should the topics covered in higher level modules. Hence, approaches, technologies and topics mentioned in this outline syllabus are indicative rather than prescriptive.

1. Non-relational data models (e.g. object, object-relational, semi-structured etc.)
2. Approaches to modelling information (e.g. using one or more of UML, ORM, etc.).
3. Non-relational database management systems (e.g. Caché, Lore, etc.)

4.	Implementing information systems using non-relational databases.
5.	Selected advanced topics in database information systems (e.g. document management systems, data warehousing, etc.)

Learning Outcomes

1 Knowledge and understanding
On successful completion of this module the student will be able to:

1.1	Critically analyse and evaluate competing data models and database technologies.
1.2	Critically analyse, synthesise and evaluate material on a variety of advanced topics concerned with database information systems.

2 Skills
On successful completion of this module the student will be able to:

2.1	Produce effective designs for non-relational databases using an appropriate design language (e.g. UML, ORM, etc.).
2.2	Use a non-relational DBMS, and appropriate data languages (e.g SQL, XML Schema, Relax NG, XQuery, etc.) to implement a non-relational database.

Assessment Strategy

The module will be assessed both formatively and summatively. Formative assessment will be provided by on-line quizzes and tutorial exercises.

Evidence
A portfolio of evidence will be generated as students progress through the module. The portfolio will consist of selected exercises drawn from the weekly tutorial and practical exercises, forming a continuous record of students' progress through the module. It will include at least one extended report and one software product.

Class tests, for example objective question and practical tests, will assess the student's knowledge and their ability to apply that knowledge, and written tests their ability to critically analyse and evaluate alternative approaches to information management.

Assessment criteria
The generic assessment criteria from the Scheme Document and the Learning Outcomes will apply.

Assessment weighting
Portfolio (50%)
	outcomes (All outcomes)
Class tests (50%)
	outcomes (1.1, 1.2)

Learning Strategy

Lectures, computer laboratory workshops and unsupervised study.

Resources Required
Access to a PC lab equipped with appropriate database software, e.g. MySQL and Cache

Indicative References

Date, C.J. (2003) *An introduction to database systems (8th edn.)* Addison Wesley

Elmasri, R.A. and Navathe, S. (2003) *Fundamentals of database systems (4th edn.)* Addison Wesley

Halpin, T. (2001) *Information modelling and relational databases*, Morgan Kaufmann: San Francisco, CA.

Melton, J. (2002) *SQL:1999 Understanding object-relational and other advanced features*, Morgan Kaufmann: San Francisco, CA.