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MODULE DESCRIPTOR

Module Title

Database construction and use

Reference	BSM053	Version	5
Created	April 2017	SCQF Level	SCQF 11
Approved	March 2015	SCQF Points	15
Amended	August 2017	ECTS Points	7.5

Aims of Module

To provide the student with the ability to explain the key concepts of database design and manipulation, using the relational model. To develop the student's skill in the practical implementation of database applications in a relational database management system (RDBMS). To enable the student to explore the main features of a DBMS and different models of database architecture (hierarchical, network, relational, object-oriented).

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

- 1 Design a normalised database in relational form.
- 2 Demonstrate database table creation and analyse effective database querying in SQL.
- 3 Implement, test and evaluate a relational database application using a DBMS.
- 4 Explain the main features of a DBMS and analyse the principles used in DBMS design.
- 5 Evaluate critically the different forms of DBMS architecture.

Indicative Module Content

Introduction to database programming. Conceptual modelling: an introduction to simple entity-relationship modelling. The relational database model: tables, relationships, keys, joins and normalisation; creating tables using SQL. Database queries: an introduction to SQL queries, including the use of sub-queries. DBMS principles and structure: advanced transaction management and recovery systems; use of SQL in transaction management and security. Database architectures: centralised systems; client-server configuration; basic principles of distributed systems. Application generation: use of relational DBMS to create an application with forms, reports, and an interactive menu interface.

Module Delivery

Key concepts are introduced and illustrated through lectures and directed reading. Understanding is tested and further enhanced through laboratory work and tutorials.

Indicative Student Workload

	Full Time	Part Time
Contact Hours	66	17
Non-Contact Hours	84	133
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	150
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	1, 4, 5
Description:	Individual Portfolio Assessment				

Component 2

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	2, 3
Description:	Individual Practical Assessment				

MODULE PERFORMANCE DESCRIPTOR**Explanatory Text**

The Module is assessed by two components: C1 - Coursework - 50% weighting. C2 - Coursework - 50% weighting. Module Pass Mark = Grade D (40%)

Module Grade	Minimum Requirements to achieve Module Grade:
A	At least 70% on weighted aggregate
B	At least 60% on weighted aggregate
C	At least 50% on weighted aggregate
D	At least 40% on weighted aggregate
E	At least 35% on weighted aggregate
F	Less than 35% on weighted aggregate
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

- 1 CONNOLLY, T.M. and BEGG, C.E., 2010. *Database systems: a practical approach to design, implementation and management*. 5th ed. Boston, MA: Addison-Wesley.
- 2 DATE, C. J., 2004. *An introduction to database systems*. 8th ed. Boston, MA: Addison-Wesley.
- 3 ELMASRI, R. and NAVATHE, S.B., 2010 *Fundamentals of database systems*. 6th ed. Sacramento: Pearson/Addison Wesley.
- 4 CORONEL, C. and MORRIS, S., 2017. *Database systems: design, implementation and management*. 12th ed. Andover: Cengage.