2024 / 25

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South East Technological University

Module Descriptor

Relational Databases (Computing and Mathematics)

Relational Databases (A11106)

Short Title: Relational Databases
Department: Computing and Mathematics
Credits: 5 **Level:** Introductory

Description of Module / Aims

This module will introduce the student to the principles and practice of designing and implementing relational database systems. The student will gain competence in Entity Relationship modelling and normalisation techniques. The student will be introduced to the concepts of data persistence, consistency and distribution in the relational database context. They will gain experience in the design and implementation of a practical relational database system.

Programmes

		stage/semester/status
COMP-0638	BSc (Hons) in Applied Computing (International) (WD_KACCM_BI)	2 / 3 / M
COMP-0638	BSc (Hons) in Applied Computing (WD_KACCM_B)	2 / 3 / M
COMP-0638	BSc (Hons) in Applied Computing (WD_KCOMP_B)	2 / 3 / M
COMP-0638	BSc (Hons) in Computer Forensics and Security (WD_KCOFO_B)	2 / 3 / M
COMP-0638	BSc (Hons) in Computer Science (WD_KCMSC_B)	2 / 3 / M

Indicative Content

- The Relational Model and Relational Database Management System (RDBMS)
- Database Analysis & Design
- Entity Relationship Modelling & Normalisation
- SQL Data definition & manipulation
- Data persistence, ACID transaction management and distributed databases

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Examine a business scenario to design a suitable relational database solution.
2. Construct entity relationship (ER) diagrams from business scenarios and reproduce those diagrams as normalised relations ready for database implementation.
3. Construct a physical database design.
4. Create a relational database in business using SQL Data Definition Language (DDL)
5. Construct queries on a relational database using SQL Data Manipulation Language (DML)
6. Discuss the concepts of data persistence, ACID transaction management and database distribution.

Learning and Teaching Methods

- The lectures will introduce the theory content to the student. The student will be encouraged to participate in class discussions and ask questions to support their learning process.
- The practical classes facilitate the student in implementing the theory learned in the lectures.
- The practical classes will encourage group work particularly for the relational modelling module content.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	
Practical	24	
Independent Learning	87	

Assessment Methods

	Weighting	Outcomes Assessed
Final Written Examination	50%	1,2,3,6
Continuous Assessment	50%	
Assignment	50%	1,2,3,4,5

Assessment Criteria

<40%: Unable to interpret and describe key concepts of relational database systems.

40%–49%: Be able to interpret and describe key concepts of relational database systems.

50%–59%: Ability to discuss key concepts of the analysis, design and implementation of relational database systems and ability to discover and integrate related knowledge in other knowledge domains.

60%–69%: Be able to solve problems within the design and implementation of relational database systems by experimenting with the appropriate skills and tools.

70%–100%: All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of both complex and unforeseen problems through the use and modification of appropriate skills and tools.

Supplementary Material(s)

- Connolly, Thomas M. and E. Carolyn. *Database Systems: A practical approach to design, implementation and management.* 6th ed.. NY: Addison-Wesley, 2015.

Requested Resources

- Room Type: Computer Lab