INFS 2003 DATABASE DESIGN AND DEVELOPMENT (WSTC)

Credit Points 10

Legacy Code 700011

Coordinator Maria Mikhail (https://directory.westernsydney.edu.au/search/name/Maria Mikhail/)

Description The main purpose of this subject is to provide students with an opportunity to gain a basic knowledge of database design and development including data modeling methods, techniques for database design using a set of business rules that are derived from a case study and finally implementation of the database using a commercial relational database management system. Through group work and tutorial practicals, students examine a number of important database concepts such as database administration, concurrency, backup and recovery and security whilst developing their professional communication and team work skills.

School Computer, Data & Math Sciences

Discipline Database Management

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 2 subject

Pre-requisite(s) Students enrolled in 7067 Diploma in Information and Communications Technology Extended and 7134 Diploma in Information and Communications Technology Extended – ICT must pass LANG 0002 Academic Communication 2 (WSTC Prep) or LANG 0032 English for Tertiary Study 2 (WSTC Prep) or LANG 0039 Introduction to Academic Communication 2 (WSTC Prep) and must pass INFO 0008 Computer Studies (WSTC Prep) and must pass COMP 0003 Programming Design (WSTC Prep) before enrolling in this unit
Students enrolled in 7138 Diploma in Information and Communications Technology Extended-ICT 7139 Diploma in Information and Communications Technology Extended 7140 Diploma in Information and Communications Technology Extended–IS and 7141 Diploma in Information and Communications Technology Extended-HIM must pass LANG 0012 Academic and Professional Communication (WSTC Prep) and must pass INFO 0010 Information Technology in Business (WSTC Prep) and must pass COMP 0003 Programming Design (WSTC Prep)
Students enrolled in 6038 Diploma in Information and Communications Technology Bachelor of Information and Communications Technology (HIM) 6039 Diploma in Information and Communications TechnologyBachelor of Information and Communications Technology 6040 Diploma in Information and Communications TechnologyBachelor of Information Systems 7163 Diploma in Information and Communications Technology and 7164 Diploma in Information and Communications Technology (HIM) must pass COMP 0003 Programming Design (WSTC Prep)

Equivalent Subjects INFS 2001 - Database Design and Development

Restrictions Students must be enrolled at Western Sydney University, The College or in program 7174 Undergraduate Certificate in Information and Communications Technology. Students enrolled in Extended Diploma programs must have passed 40 credit points of

preparatory subjects in order to enrol in this subject. Students enrolled in the combined Diploma/Bachelor programs listed below must pass all College Preparatory subjects listed in the program structure before progressing to the Year 2 subjects.

Assumed Knowledge

Basic programming skills, including variable declaration, variable assignment, selection statement and loop structure.

Learning Outcomes

On successful completion of this subject, students should be able to:
1. Describe components of a database system, advantages and disadvantages of a database system, roles people play and the historical development of a database system in the context of a Relational Database Management System (RDBMS)
2. Apply basic skills in database modelling, including ER diagrams and normalisation in RDBMS
3. Explain the basic concepts of relational algebra and apply them in queries
4. Describe the general concepts of transaction management
5. Identify concepts in database administration
6. Describe concepts in database security and backup
7. Define and manipulate data using structured query language (SQL)
8. Design and develop a database for a business application using a commercial database management system

Subject Content

1. Introduction to database concepts and ANSI Spark 3 level architecture
2. Concepts in data modelling
3. Integration of data and data independence
4. Translating a case study into relational concepts and integrity constraints
5. Introduction to relational algebra/calculus
6. Data modelling: Conceptual, logical and physical database design
7. Data definition and manipulation using SQL
8. Concepts in generalisation and specialisation
9. Anomalies in databases and data normalisation
10. Database administration
11. Introduction to database security and encryption
12. Introduction to transaction management, concurrency and locking
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11.Introduction to transaction management, concurrency and locking.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Applied Project	Max 2000 words in no more than 20 pages. 5 weeks duration	15	N	Group	N
Applied Project	Max 2000 words in no more than 20 pages. 5 weeks duration	15	N	Group	N
Practical	A: Quizzes x2 (10%) B: Practical exercises (10%)	20	N	Individual	N
End-of-session Exam	2 hours	50	Y	Individual	Y

Teaching Periods

Term 2 (2025)
Penrith (Kingswood)
On-site
Subject Contact Maria Mikhail (https://directory.westernsydney.edu.au/search/name/Maria Mikhail/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=INFS2003_25-T2_KW_1#subjects)

Parramatta City - George St
On-site
Subject Contact Maria Mikhail (https://directory.westernsydney.edu.au/search/name/Maria Mikhail/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=INFS2003_25-T2_PG_1#subjects)