

# Course Outline

**Title:** DATABASE MANAGEMENT SYSTEMS

**Code:** ITECH1006

**Formerly:** CP611

**Faculty / Portfolio:** Faculty of Science

## Program Level:

	AQF Level of Program					
	5	6	7	8	9	10
Level						
Introductory			✓			
Intermediate						
Advanced						

**Pre-requisites:** Nil

**Co-requisites:** Nil

**Exclusions:** (CP611 and CP858 and ITECH5006)

**Progress Units:** 15

**ASCED Code:** 020303

## Learning Outcomes:

### Knowledge:

- K1.** explain usage of a number of different types of information systems in commercial use;
- K2.** demonstrate an understanding of emerging trends in database technology;
- K3.** describe the different models of database management systems (hierarchical, network, relational, object);
- K4.** design a relational database for a provided scenario utilising tools and techniques including ER diagrams, relation models and normalisation;
- K5.** describe relational algebra and its relationship to Structured Query Language (SQL);

### Skills:

- S1.** interpret entity-relationship diagrams to implement a relational database;
- S2.** demonstrate skills in designing and building a database application using a commercially available database management system development tool;
- S3.** use a query language for data manipulation;

### Application of knowledge and skills:

- A1.** design and implement a relational database using a database management system;
- A2.** utilise a query language tools and techniques to obtain data and information from a database;

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### Values and Graduate Attributes:

#### Values:

- V1. appreciate the need for a level of professionalism when designing and implementing database solutions.

#### Graduate Attributes:

Attribute	Brief Description	Focus
Continuous Learning	Utilising a blended learning approach facilitated by case studies and scenarios requiring the storage and management of data.	Medium
Self Reliance	Students will participate in self-directed learning environment to develop their technical and theoretical expertise in the field of database management systems.	Medium
Engaged Citizenship	Students will utilise database management tools currently in use within industry.	Low
Social Responsibility	Students will be introduced to the concepts of information privacy and security.	Medium

#### Content:

Topics may include:

- Introduction to database management systems, advantages of the database approach, data modelling, schemas, access and security provisions for multi-user databases.
- The relational model, primary and foreign keys, referential integrity, relational algebra, structured query language and normalisation.
- Database systems in the context of information systems, types of information systems, organisation and management theories.
- Human computer interaction fundamentals, visual design standards.
- Database maintenance operations, retrieving information from a database, logical transactions, locking and avoidance of deadlocks, logging, backup and recovery.

#### Assessment:

Participation in lectures, tutorials and computer laboratory classes. Completion of all tutorial and laboratory worksheets for the semester.

Students are expected to spend time regularly out of scheduled classes, reading reference material as required, reviewing topics already covered in lectures and preparing for forthcoming topics and laboratory classes and completing assessment tasks.

Assessment for this course will be based on a number of tasks. These may include written assignments, programming tasks and laboratory exercises covering the systems development and programming design. An end of semester examination is based on all aspects of the course.

Learning Outcomes Assessed	Assessment Task	Assessment Type	Weighting
K4, K5, S1, S2, S3, A1, A2	Development of skills and deepening of understanding	Assignments, tutorial questions, laboratory exercises	40 - 50 %

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K1, K2, K3, K4, K5, S2, S3	Participation in class activities, supplementary reading and other activities as suggested in lectures	Examination(s)/Test(s)	50 - 60%
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### Adopted Reference Style:

APA

### Presentation of Academic Work:

<https://federation.edu.au/students/assistance-support-and-services/academic-support/general-guide-for-the-presentation-of-academic-work>