



The University of Southern Queensland

Course specification

The current and official versions of the course specifications are available on the web at <http://www.usq.edu.au/coursespecification/current>.
Please consult the web for updates that may occur during the year.

Description: Database Design

| Subject | Cat-nbr | Class | Term | Mode | Units | Campus |
|---------|---------|-------|---------|------|-------|-----------|
| CIS | 2002 | 96055 | 3, 2009 | EXT | 1.00 | Toowoomba |

| | |
|-----------------------------------|--------|
| Academic group: | FOBUS |
| Academic org: | FOB005 |
| Student contribution band: | 2 |
| ASCED code: | 020303 |

STAFFING

Examiner: Kristeen Casey
Moderator: Glen Van Der Vyver

OTHER REQUISITES

Students are required to have access to a personal computer, e-mail capabilities and Internet access to UConnect. Current details of computer requirements can be found at <http://www.usq.edu.au/ict/students/standards/default.htm>.

RATIONALE

An essential component of a successful information system is usually a well designed and efficient database. It is important for those who wish to become information systems practitioners to have a sound understanding of current database trends and techniques. Furthermore, it is of crucial importance that information systems practitioners build sound skills in data modelling, normalisation and communication with stakeholders, and are able to apply these skills to the design of a wide range of databases, in particular commercial databases. These skills are also amongst those that have also been recognised as a high priority skills in the IT industry and are part of the core set of skills required for those who seek careers in areas such as business analysis, systems analysis and business architecture.

SYNOPSIS

This course introduces students to relational database theory and design. Practical methodologies for data analysis, data modelling and database design are examined, coupled with a detailed study of the relational database model. Students will build practical skills in data modelling, normalisation and database design. Students will also be exposed to a range of topics in database theory and current database trends. The course presents these topics within a framework that focuses on developing business problem-solving and communication skills.

OBJECTIVES

On successful completion of this course, students should be able to:

1. describe, use and apply data analysis and modelling techniques, including ER diagramming and normalisation, and derive a relational database design
2. demonstrate an ability to analyse and justify database designs, with clear verbal and written statements of any assumptions about the data
3. demonstrate an ability to understand and make use of a variety of forms of business communication in the design process
4. demonstrate an understanding of current database theory and trends
5. use data analysis, modelling and normalization techniques to analyse and solve information systems and business problems.

TOPICS

| Description | Weighting (%) |
|-------------------------------------|---------------|
| 1. Database theory | 35.00 |
| 1.1. The database environment | |
| 1.2. Database trends and techniques | |
| 2. Database design | 65.00 |
| 2.1. Data model | |
| 2.2. Data analysis | |
| 2.3. Relational model | |
| 2.4. E.R. diagramming | |
| 2.5. Normalisation | |

TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

D'Orazio, R & Happel, G 1996, *Practical data modelling for database design*, John Wiley & Sons, Milton, Queensland.

Hoffer, J, Prescott, B & McFadden, F 2007, *Modern database management*, 8th edn, Pearson/Prentice Hall, Upper Saddle River, New Jersey.

Lahey, H 2000, *Information systems developers handbook: a road map for students*, University of Southern Queensland, Toowoomba, Queensland.

(This handbook is available on the USQ website at <http://www.usq.edu.au/business/schools/is/isdevhandbook.htm>.)

Summers, J & Smith, B 2010, *Communication skills handbook*, 3rd edn, John Wiley & Sons, Milton, Queensland.

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Date, CJ 2004, *An introduction to database systems*, 8th edn, Pearson/Addison Wesley, Boston, Massachusetts.

Elmasri, R & Navathe, SB 2007, *Fundamentals of database systems*, 5th edn, Pearson/Addison-Wesley, Boston, Massachusetts.

Finkelstein, C 1992, *Information engineering: strategic systems development*, Addison-Wesley, Sydney, New South Wales.

Kroenke, DM 2006, *Database processing: fundamentals, design and implementation*, 10th edn, Pearson Prentice-Hall, Upper Saddle River, New Jersey.

Rob, P & Coronel, C 2007, *Database systems design implementation and management*, 7th edn, Thomson/Course Technology, Boston, Massachusetts.

STUDENT WORKLOAD REQUIREMENTS

| ACTIVITY | HOURS |
|----------------|--------|
| Directed Study | 48.00 |
| Private Study | 117.00 |

ASSESSMENT DETAILS

| Description | Marks out of | Wtg (%) | Due date | Objectives assessed | Graduate skill | Level assessed |
|--------------------|--------------|---------|------------------------|---------------------|--------------------|----------------|
| ONLINE TEST 1 | 10.00 | 2.00 | 03 Dec 2009 | 1, 4, 5 | U3 | 2 |
| ONLINE TEST 2 | 10.00 | 2.00 | 06 Jan 2010 | 1, 4, 5 | U3 | 2 |
| ASSIGNMENT | 100.00 | 26.00 | 22 Jan 2010 | 1, 4, 5 | U2, U3, U4, U8, U9 | 2, 2, 2, 2, 2 |
| 2-HOUR EXAMINATION | 100.00 | 70.00 | END S3 (see note 1) | All | U2, U3, U4 | 2, 2, 2 |

NOTES

1. The examination is scheduled to be held in the end-of-semester examination period. Students will be advised of the official examination date after the timetable has been finalised.

GRADUATE QUALITIES AND SKILLS

Elements of the following Graduate Skills are associated with the successful completion of this course.

| Graduate skill assessed | Level assessed |
|---|------------------------|
| Problem Solving (Skill U2) | Intermediate (Level 2) |
| Academic & Professional Literacy (Skill U3) | Intermediate (Level 2) |
| Written & Oral Communication (Skill U4) | Intermediate (Level 2) |
| Managmt, Planning & Org Skills (Skill U8) | Intermediate (Level 2) |
| Creatvty, Initiative & Entrprse (Skill U9) | Intermediate (Level 2) |

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
If you are an international student in Australia, you are advised to attend all classes at your campus. For all other students, there are no attendance requirements for this course. However, it is the students' responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:
To satisfactorily complete an individual assessment item a student must achieve at least 50% of the marks. (Depending upon the requirements in Statement 4 below, students may not have to satisfactorily complete each assessment item to receive a passing grade in this course.)
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without prior approval of the examiner, then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded. No assignments will be accepted after model answers have been posted.
- 4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
- 5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the aggregate of the weighted marks obtained for each of the summative assessment items in the course.
- 6 Examination information:
This is a closed examination. Candidates are allowed to bring only writing and drawing instruments into the examination.
- 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the next examination period.
- 8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6 Assessment, and 5.10 Student Academic Misconduct for further information and to avoid actions which might contravene university regulations. These regulations can be found at <<http://www.usq.edu.au/corporateservices/calendar/part5.htm>>. Students should also read the Faculty of Business Procedures which can be found at <<http://www.usq.edu.au/business/aboutfob.htm>>.

ASSESSMENT NOTES

- 1 Assignments: (i) The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the examiner. (ii) Students must retain a copy of each item submitted for assessment. This must be produced within 24 hours if required by the examiner. (iii) In accordance with university policy, the examiner may grant an extension of the due date of an assignment in extenuating circumstances. (iv) The examiner will normally only accept assessments that have been written, typed or printed on paper-based media. (v) Students who do not have regular access to postal services or who are otherwise disadvantaged by these regulations may be given special consideration. They should contact the examiner to negotiate such special arrangements. (vi) In the event that a due date for an assignment falls on a local public holiday in their area, such as a show holiday, the due date for the assignment will be the next day. Students are to note on the assignment cover the date of the public holiday for the examiner's convenience.
- 2 Course weightings: Course weightings of topics should not be interpreted as applying to the number of marks allocated to questions testing those topics in an examination paper.
- 3 Referencing in assignments: Harvard (AGPS) is the referencing system required in this course. Students should use Harvard (AGPS) style in their assignments to format details of the information sources they have cited in their work. The Harvard (AGPS) style to be used is defined by the USQ Library's referencing guide at <http://www.usq.edu.au/library/help/referencing/default.htm>.
- 4 Make-up Work: Students who have undertaken all of the required assessments in a course but who have failed to meet some of the specified objectives of a course within the normally prescribed time may be awarded the temporary grade: IM (Incomplete - Make up). An IM grade will only be awarded when, in the opinion of the examiner, a student will be able to achieve the remaining objectives of the course after a period of non-directed personal study.
- 5 Deferred work: Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment or to sit for an examination at the scheduled time may apply to defer an assessment in a course. Such a request must be accompanied by appropriate supporting documentation. One of the following temporary grades may be awarded: IDS (Incomplete - Deferred Examination); IDM (Incomplete Deferred Make-up); IDB (Incomplete - Both Deferred Examination and Deferred Make-up).
- 6 Appeals: Any appeal against the award of a grade in the course will be conducted in accordance with university regulations. These regulations are published in the university handbook.

OTHER REQUIREMENTS

- 1 Computer, e-mail and Internet access: Students are required to have access to a personal computer, e-mail capabilities and Internet access to UConnect. Current details of computer requirements can be found at <http://www.usq.edu.au/ict/students/standards/default.htm>.
- 2 Some study materials and important information about the course will be made available via the online discussion group. Students are therefore expected to access the discussion group regularly and read all postings.