The key component of information systems is database management systems. These are widely used in scientific, business, government, and industrial organisations. It is important for a computing professional to understand the basic concepts of database systems, to be proficient in database query languages, and to know the design principles of database systems.

This course covers the fundamental issues of the relational model, relational languages, database design and query processing. It starts with a structure overview of database systems and a brief review of the Entity-Relationship model. The relational model is then covered in detail. A relational language such as SQL is included. Topics on database design principles in this course include functional dependencies, various normal forms, and normalisation through decomposition. Students will gain a good understanding of database design theory and principles and be able to develop database systems and application programs on a DBMS.

On completion of this course the student should:

- have a good understanding of the relational model.
- be able to use relational algebra and relational calculus correctly.
- be able to query and update relational databases using the SQL.
- understand and apply database design principles correctly.

**TOPICS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. the Entity-Relationship model</td>
<td>15.00</td>
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<tr>
<td>2. the Relational algebra and relational calculus</td>
<td>20.00</td>
</tr>
<tr>
<td>3. the SQL language</td>
<td>25.00</td>
</tr>
<tr>
<td>4. relational database design</td>
<td>25.00</td>
</tr>
<tr>
<td>5. query processing</td>
<td>15.00</td>
</tr>
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</table>

**TEXT and MATERIALS required to be PURCHASED or ACCESSED:**

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at http://bookshop.usq.edu.au by entering the author or title of the text.


Introductory Book 2003, *Course CSC3400 Database Systems*, USQ Distance Education Centre, Toowoomba.

Study Book 2003, *Course CSC3400 Database Systems*, USQ Distance Education Centre, Toowoomba.

**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.


STUDENT WORKLOAD REQUIREMENTS

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>HOURS</th>
</tr>
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<tbody>
<tr>
<td>Examinations</td>
<td>3</td>
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<tr>
<td>Laboratory or Practical Classes</td>
<td>10</td>
</tr>
<tr>
<td>Lectures</td>
<td>39</td>
</tr>
<tr>
<td>Private Study</td>
<td>115</td>
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ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>ASSIGNMENT 1</td>
<td>100.00</td>
<td>10.00</td>
<td>Y</td>
<td>31 Mar 2003</td>
</tr>
<tr>
<td>ASSIGNMENT 2</td>
<td>100.00</td>
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<td>Y</td>
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</tr>
<tr>
<td>ASSIGNMENT 3</td>
<td>100.00</td>
<td>15.00</td>
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<td>06 Jun 2003</td>
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<td>2.5 HR CLOSED EXAMINATION</td>
<td>100.00</td>
<td>60.00</td>
<td>Y</td>
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</tbody>
</table>

NOTES:

. Examination dates will be available during the semester. Please refer to the examination timetable when published.

IMPORTANT ASSESSMENT INFORMATION

1 Attendance requirements:
   It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them (including course Web pages) 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 complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available for each assessment item

3 Penalties for late submission of required work:
   If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late

4 Requirements for student to be awarded a passing grade in the course:
To be assured of receiving a passing grade a student must submit all of the summative assessment items, achieve at least 50% in the examination and at least 50% of the available weighted marks for the summative assessment items.

5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.

6 Examination information:
In 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 examination period at the end of the semester of the next offering of this course.

8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL http://www.usq.edu.au/SECARIAT/calendar/Part5/ or in the printed version of the current USQ Handbook.

**ASSESSMENT NOTES**

9 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.

10 Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner.

11 The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media.

**OTHER REQUIREMENTS**

1 Students will require access to e-mail and internet access to USQConnect for this course.

2 Students will be granted a deferred examination only if they perform satisfactorily in all other assessment items.