Lectures:

Leszek Maciaszek (Lecturer in Charge)

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Time and place:

Friday 2:00 – 5:00 PM C1.1 (Carroll Building)

Reading list:

Textbook:


Aims of the unit:

This unit explores the purpose of a database management system (DBMS), the different architectures currently employed, and their various theoretical foundations. The unit includes an in-depth study of SQL programming, relational database design and system implementation. Basic concepts of data warehouse technology, distributed databases and object database systems are also introduced. Students will design and program databases and consider in an enhanced context for technological innovation within organisations.
Objectives:

On completion of this unit the student will be able to:

(i) describe the basic concepts of logical and physical data modelling;
(ii) understand database design process and requirements formulation;
(iii) demonstrate practical skills in database system implementation;
(iv) understand data and query processing methods in a database system;
(v) understand database management and administration;
(vi) compare the application of different DBMSs.

Assessment:

Two Assignments (each worth 20%)
Final examination (60%)

Regulations:

A) GENERAL STATEMENT

Students are advised to refer to the University regulations for examinations and assessment as published in the Australian Catholic University (Faculty of Arts and Sciences) Handbook. In particular, they are advised of the regulations regarding plagiarism and should note that any work done in collaboration with other students (either formally or informally) should be so acknowledged; work based on input from other persons (e.g. discussions, lecture notes) should be appropriately cited.

B) ATTENDANCE

Attendance at scheduled lectures and classes is a normal expectation.

C) GENERAL STATEMENT ON SPECIAL CONSIDERATION

Students who have life circumstances or personal limitations which may affect their course of study, should raise these with their lecturer as early as possible, or with one of the following members of staff:

★ Student Counsellor
★ Academic Skills Adviser
★ Disability Liaison Officer

Special consideration cannot be given retrospectively for adverse conditions of which the lecturer was not aware at the time.
**Weekly schedule:**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading (Mannino)</th>
<th>Asg</th>
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<tbody>
<tr>
<td>1 Jul 23</td>
<td>Introduction to database management. The relational data model.</td>
<td>1; 2</td>
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<tr>
<td>2 Jul 30</td>
<td>Query formulation with SQL.</td>
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<tr>
<td>3 Aug 6</td>
<td>Advanced query formulation with SQL. Application development with views.</td>
<td>4 ; 5</td>
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<tr>
<td>4 Aug 13</td>
<td>Introduction to database development. Data modeling.</td>
<td>6; 7</td>
<td>Asg 1 out</td>
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<tr>
<td>5 Aug 20</td>
<td>Normalization of relational tables. View design and integration.</td>
<td>8; 9</td>
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<td>6 Aug 27</td>
<td>Physical database design.</td>
<td>10</td>
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<tr>
<td>7 Sep 3</td>
<td>Database design – case study.</td>
<td>11 Asg 1 in</td>
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<tr>
<td>8 Sep 10</td>
<td>Data and database administration.</td>
<td>12 Asg 2 out</td>
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<tr>
<td>9 Sep 17</td>
<td>Transaction management.</td>
<td>13</td>
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<td>Break Sep 22 - 30</td>
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<tr>
<td>10 Oct 1</td>
<td>Data warehouse technology and management.</td>
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<tr>
<td>11 Oct 8</td>
<td>Client-server processing and distributed databases.</td>
<td>15 Asg. 2 in</td>
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<td>12 Oct 15</td>
<td>Object database management systems.</td>
<td>16</td>
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