The University of Southern Queensland

Course Specification

Description: Advanced Web Data Management

<table>
<thead>
<tr>
<th>Subject</th>
<th>Cat-Nbr</th>
<th>Class</th>
<th>Term</th>
<th>Mode</th>
<th>Units</th>
<th>Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC</td>
<td>4404</td>
<td>28137</td>
<td>3, 2003</td>
<td>EXT</td>
<td>1.00</td>
<td>TW MBA</td>
</tr>
</tbody>
</table>

Academic Group: FOSCI
Academic Org: FOS003
HECS Band: 2
ASCED Code: 020199

STAFFING
Examiner: Yanchun Zhang
Moderator: Ron Addie

PRE-REQUISITES
Pre-requisite: CSC3400

RATIONALE
The advent of the Web has resulted in various technologies around the World-Wide Web. More and more web applications export information from the databases and flexible data models such as XML. This has also created new challenges and opportunities on web data management. This course will explore advanced issues in web data management such as transaction management, web databases and web-based information retrieval.

SYNOPSIS
This course will introduce students to the concepts of distributed transaction management, concurrency control, recovery, and query processing, web databases integration, semi-structured data and XML-related technologies such as SML Schema and RDF, web-based information retrieval, and Web search.

OBJECTIVES
On completion of this course students will be able to:

- understand advanced data management issues in databases.
- understand recent web database technologies.
- develop web-based applications involving semi-structured data, XML databases and various web information resources.
- understand web-based information retrieval techniques.
- understand the security of distributed computing systems.
TOPICS

<table>
<thead>
<tr>
<th>Description</th>
<th>Weighting (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transaction Management: Transactions, concurrency control and recovery</td>
<td>20.00</td>
</tr>
<tr>
<td>2. Query Processing: Cost estimation, query optimisation</td>
<td>10.00</td>
</tr>
<tr>
<td>3. Distributed Transaction Management: Distributed concurrency control, two phase commitment</td>
<td>10.00</td>
</tr>
<tr>
<td>4. Web Databases: Integrate databases over web</td>
<td>10.00</td>
</tr>
<tr>
<td>5. Semi-structured Data and XML-related Technology: Semi-structured data, Object Exchange Model (OEM) XML schema and XML query languages, RDF</td>
<td>20.00</td>
</tr>
<tr>
<td>6. Introduction to Information Retrieval: IR Models, Keyword-Based Querying, Pattern Matching and Structural Queries, Indexing and Searching</td>
<td>20.00</td>
</tr>
<tr>
<td>7. Web Search: Modelling the web, search engines, and browsing</td>
<td>10.00</td>
</tr>
</tbody>
</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.


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>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>40</td>
</tr>
<tr>
<td>Private Study</td>
<td>130</td>
</tr>
</tbody>
</table>
ASSESSMENT DETAILS

<table>
<thead>
<tr>
<th>Description</th>
<th>Marks Out of</th>
<th>Wtg(%)</th>
<th>Required</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSIGNMENT 1</td>
<td>15.00</td>
<td>15.00</td>
<td>Y</td>
<td>05 Dec 2003</td>
</tr>
<tr>
<td>ASSIGNMENT 2</td>
<td>15.00</td>
<td>15.00</td>
<td>Y</td>
<td>09 Jan 2004</td>
</tr>
<tr>
<td>ASSIGNMENT 3</td>
<td>70.00</td>
<td>70.00</td>
<td>Y</td>
<td>13 Feb 2004</td>
</tr>
</tbody>
</table>

IMPORTANT ASSESSMENT INFORMATION

1 Attendance requirements:
   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 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 gained by the student 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 and achieve at least 50% of the available marks for those 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 aggregate of the weighted marks obtained for each of the summative assessment items in the course.

6 Examination information:
   There is no examination in this course.

7 Examination period when Deferred/Supplementary examinations will be held:
   There will be no Deferred or Supplementary examinations in 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 Students must retain a copy of each item submitted for assessment. If requested, students will be required to provide a copy of assignments submitted for assessment purposes. Such copies should be despatched to USQ within 24 hours of receipt of a request being made.
10 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.

11 Students must retain a copy of each item submitted for assessment. This must be produced within 24 hours if required by the Examiner.

12 The examiner of a course may grant an extension of the due date of an assignment in extenuating circumstances.

13 The Faculty will NOT accept submission of assignments by facsimile.

14 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.

15 Students who, for medical, family/personal, or employment-related reasons, are unable to complete an assignment, may apply to defer the assessment. Such a request must be accompanied by appropriate supporting documentation. The temporary grade IDM (Incomplete Deferred Make-up) will be awarded to such students until the deferred assignment has been assessed.

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