Unit Outline 2011
Faculty of Information Sciences and Engineering

Unit Title: Database Design G

Unit Number: 6672
This Unit Outline must be read in conjunction with:

a) *UC Student Guide to Policies*, which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at *(scroll to bottom of page)*
   http://www.canberra.edu.au/student-services

b) *UC Guide to Student Services*, and is available at *(scroll to bottom of page)*
   http://www.canberra.edu.au/student-services

c) Any additional information specified in section 6h.

## 1: General Information

1a Unit title: Database Design G

1b Unit number: 6672

1c Semester and year offered: Semester 2 2011

1d Credit point value: 3 credit point

1e Unit level: 1

1f Name of Unit Convener and contact details (including telephone and email)
A/Professor Masoud Mohammadian
11B43 (Room No 43, Level B, Building 11)
Phone No: 6201 2917, Fax: 6201 5231
Email: masoud.mohammadian@canberra.edu.au

Moderator
Dr Girija Chetty
11C48 (Room No 48, Level C, Building 11)
Phone 6201 2512, Fax: 6201 5231
Email girija.chetty@canberra.edu.au

1g Administrative contact details (including name, location, telephone and email)
School Information Sciences and Engineering
School Office: 11B14 Phone 6201 2417, Fax 6201 5231
Email: ise@canberra.edu.au
2: Academic Content

2a Unit description and learning outcomes

i. Syllabus: This unit introduces a practical approach to the development and design of database systems. The emphasis is placed on relational database management systems, their development and implementation in a modern organisational environment. The use of modern query languages for relational databases is discussed and experienced. Conceptual, logical and physical database design issues are also covered. Other topics include client-server database computing and database administration issues.

ii. Learning Outcomes: Upon successful completion of this unit the students will be able to: 1. list, describe, and illustrate the steps in a database system development life cycle and 2. illustrate the inputs and outputs in that process, with an emphasis on data modelling. 3. Students will acquire data analysis skills and 4. develop an appropriate set of data models for relational database implementation. 5. The students will also be able to demonstrate the use of the SQL language in a database server environment.

2b Generic skills

Graduate Attributes: This unit primarily addresses the UC graduate attributes on

1. Communication
The ability to present knowledge, ideas and opinions effectively and communicate within and across professional and cultural boundaries

2. Analysis and inquiry
The ability to gather information, and to analyse and evaluate information and situations in a systematic, creative and insightful way

3. Problem solving
The ability to apply problem-solving processes in novel situations; to identify and analyse problems then formulate and implement solutions

4. Working independently and with others
The ability to plan their own work, be self-directed, and use interpersonal skills and attitudes to work collaboratively

2c Prerequisites and/or co-requisites
Information Systems in Organisations (6348) or Introduction to Software Engineering (5531)

3: Delivery of Unit and Timetable

3a Delivery mode
This unit will be delivered on campus with weekly lectures, tutorials and laboratory sessions, as per the timetable for this semester. There will be lectures for a total of two hours duration per week and there will be one hour of tutorial and one hour of laboratory each week as per the university timetable. Tutorial/laboratory sessions start in week 2. Tutorial and laboratory exercises will be placed on the unit website before the tutorial and laboratory sessions. It is the responsibility of the students to take notes from the lecturer’s presentations during the lectures. The lecturer will provide lecture slides on the website. Lectures are based on the textbook, which is the primary reference for the unit. Each student is required to enrol in a two-hour tutorial/laboratory session.

3b Timetable of activities, such as lectures/ tutorials/ practicals/ field classes, showing key dates and topics (Information might be provided in the form of a table)
The details of the schedule below may change during the semester if the need arises.
Any changes will be notified on the unit web site.

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Topic</th>
<th>Tutorial/Labs</th>
<th>Other Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to Database Systems and Database Management Systems</td>
<td>There is no tutorial or laboratory sessions in Week 1.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hard copies of Unit Outline in the lecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2</td>
<td>Database Concepts</td>
<td>Tutorial: Database Concepts</td>
<td>Assignment 1 out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: Introduction to MS Access</td>
<td>Online quiz 1</td>
</tr>
<tr>
<td>Week 3</td>
<td>Relational Models, Entity Relationship Diagram (ERD)</td>
<td>Tutorial: Database Concepts</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: Introduction MS Access</td>
<td></td>
</tr>
<tr>
<td>Week 4</td>
<td>Entity Relationship Diagram (ERD)</td>
<td>Tutorial: Relational and ERD Concepts</td>
<td>Assignment 1 due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: MS Access</td>
<td>Assignment 2 out</td>
</tr>
<tr>
<td>Week 5</td>
<td>Normalisation</td>
<td>Tutorial: ERD exercise</td>
<td>Online quiz 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: MS Access</td>
<td></td>
</tr>
<tr>
<td>Week 6</td>
<td>Normalisation</td>
<td>Tutorial: Normalisation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: MS Access</td>
<td>Online quiz 2</td>
</tr>
<tr>
<td>Week 7</td>
<td>Structured Query Language (SQL)</td>
<td>Tutorial: Normalisation exercise</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: MS Access</td>
<td>Assignment 1 due</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Assignment 2 out</td>
</tr>
<tr>
<td>Week 8</td>
<td>Non-Teaching Period</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 9</td>
<td>SQL</td>
<td>Tutorial: Assignment 2 explained / SQL</td>
<td>Online quiz 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: SQL practice</td>
<td></td>
</tr>
<tr>
<td>Week 10</td>
<td>SQL Conceptual Design</td>
<td>Tutorial: SQL practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: SQL practice</td>
<td></td>
</tr>
<tr>
<td>Week 11</td>
<td>Logical Design Tut 9: Conceptual Design</td>
<td>Tutorial: Conceptual Design</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: Assignment 2</td>
<td></td>
</tr>
<tr>
<td>Week 12</td>
<td>Physical Design</td>
<td>Tutorial: Logical Design</td>
<td>Assignment 2 presentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: Assignment 2 presentation</td>
<td></td>
</tr>
<tr>
<td>Week 13</td>
<td>Database Life Cycle</td>
<td>Tutorial: Physical Design</td>
<td>Assignment 2 due</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: Database Life Cycle</td>
<td></td>
</tr>
<tr>
<td>Week 14</td>
<td>Unit Review</td>
<td>Tutorial: Database Life Cycle</td>
<td>Online quiz 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laboratory: Sample Exam</td>
<td></td>
</tr>
</tbody>
</table>

4a Lists of required texts/reading


Supplementary Reading:

4b Materials and equipment
No special requirements. Students may use the Faculty’s computing laboratory resources.

4c Unit website
The unit website is accessible at http://learnonline.canberra.edu.au/. The unit convener will update the unit website as and when required. Students are advised to regularly check the unit website for the latest information on the unit material and other information including announcements.

5: Assessment

5a Assessment overview

<table>
<thead>
<tr>
<th>Assessment item (including exams held in the exam period)</th>
<th>Due date of assignments</th>
<th>Weighting (total to equal 100%)</th>
<th>Addresses learning outcome(s)</th>
<th>Addresses generic skill(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1 (Individual)</td>
<td>Friday Week 7</td>
<td>15%</td>
<td>2, 3, 4</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>Online quiz 1</td>
<td>Week 3 Tutorial</td>
<td>10%</td>
<td>1, 2, 3, 4, 5</td>
<td>2, 3</td>
</tr>
<tr>
<td>Online quiz 2</td>
<td>Week 6 Tutorial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online quiz 3</td>
<td>Week 9 Tutorial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online quiz 4</td>
<td>Week 12 Tutorial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignment 2 (Group)</td>
<td>Friday Week 13</td>
<td>25%</td>
<td>1, 2, 3, 4, 5</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td>Final Examination (Closed Book)</td>
<td>During examination time set by University of Canberra (See Exam Timetable)</td>
<td>50%</td>
<td>1, 2, 3, 4, 5</td>
<td>1, 2, 3</td>
</tr>
</tbody>
</table>

5b Details of each assessment item

Assignment 1
This assignment should be completed individually by each student. It comprises a number of questions relating to database concepts, data modelling including Entity-Relationship Diagrams (ERD), relations (tables) and primary/foreign keys and the normalisation of data for (relational) database systems.

Assignment 2
This assignment is a group assignment. Individual submissions for the second assignment are not acceptable unless authorised by the lecturer based on special circumstances. In this assignment, students will design and implement a database system using a Database Management System (e.g. Microsoft Access). For this assignment, a group should consist of three to four students from the same tutorial group.
Online quiz
There will be four online quiz exercises that will be completed in week 3, week 5, week 9 and week 12 in your tutorial. The syllabus and other details of these exercises will be outlined during the lectures. The online quiz exercises will test your knowledge based on the materials covered in lecture and tutorials/laboratories.

Final Examination
The Final Examination will be a three-hour closed book examination and will be conducted according to the university examination timetable.

5c Special assessment requirements
To pass this unit, you will need to satisfy the following conditions:

a. You must achieve at least 50% as a combined total of the available marks of the two assignments and online quiz exercise; and
c. You must achieve at least 50% of the available marks in the Final Examination.

Once these conditions have been satisfied, grades will be awarded as per the following table:

<table>
<thead>
<tr>
<th>Grade Letter</th>
<th>Grade Weighted</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Distinction</td>
<td>HD</td>
<td>85% - 100%</td>
</tr>
<tr>
<td>Distinction</td>
<td>DI</td>
<td>75% - 84%</td>
</tr>
<tr>
<td>Credit</td>
<td>CR</td>
<td>65% - 74%</td>
</tr>
<tr>
<td>Pass</td>
<td>P</td>
<td>50% - 64%</td>
</tr>
<tr>
<td>Fail</td>
<td>NX</td>
<td>0% - 49%</td>
</tr>
</tbody>
</table>

All assignments are required to be submitted on the due date. If for any reason you are unable to do an assignment by the due date you must submit, to the lecturer, a request for an extension in writing well before the due date (if possible) setting out in detail the genuine and exceptional reason for requesting the extension. If there is a medical reason for the extension request it must be accompanied by a medical certificate (see below).

Medical certificates: Your medical certificate must clearly state:
- That you were unfit to complete the assignment;
- The date of the medical consultation;
- The period during which you were / are / will be unfit; and
- The severity of your illness.

A late assignment, without prior approval of the lecturer, will incur a penalty of 10% of the total possible marks for that assignment, per day. A resubmitted assignment (if requested by your tutor/lecturer) can gain at most 55% of the total available marks for that assignment.

If there is any doubt with regard to the requirements of any particular assignments or assessment procedure, the onus for clarifying the issue rests with the student who should contact the lecturer about the matter. Tutors will also be happy to assist in this regard. For the examination, students may take in a language dictionary (no calculators or technical dictionaries are permitted in the exam).

Referencing requirements:
All work quoted from other written sources should be appropriately referenced using the "author-date" (Harvard) style. This style is described in detail (including electronic sources) in the Citation Guide available at:
Other Requirements
1. Students should keep a copy of all assessment items that are submitted.
2. For submission of assignments, students must use the prescribed cover sheet and provide all
   the information required on the coversheet. The coversheet would be available on the unit
   website.
3. The lecturer reserves the right to question students orally on their submitted work
4. The assessment criterion for answers to theoretical and technical questions is both correctness
   and appropriate style.
5. The tutors will provide feedback to the students on their assignments. Students are encouraged
to seek individual feedback from the tutor/lecturer.

5d Supplementary assessment
Please see UC policy for supplementary assessment at:

5e Academic Integrity
Students should uphold University standards on ethical scholarship. Good scholarship involves
building on the work of others and use of others work must be acknowledged with proper
attribution made. Cheating, plagiarism, and falsification of data are dishonest practices which
contravene academic values. Refer to the policy at:

5f Text-matching software
Students may be required to submit text-based assignments electronically to be checked for
matching text. If so, instructions on how to do this and information about the process will be
made available (by the lecturer) in conjunction with the first of any such assessment items. Text
matching software may be used to check for plagiarism against pervious and current student
assignments, published works and internet sources.

6: Student Responsibility

6a Workload
The amount of time you will need to spend on study in this unit will depend on a number of
factors including your prior knowledge, learning skill level and learning style. Nevertheless, in
planning your time commitments you should note that for a 3cp unit the total notional
workload over the semester or term is assumed to be 150 hours. These hours include time
spent in classes. The total workload for units of different credit point value should vary
proportionally. For example, for a 6cp unit the total notional workload over a semester or term
is assumed to be 300 hours.

An estimate of the required student workload is given below:
Lectures 13 weeks (2 hours per week) 26 hours
Tutorials/Laboratories 12 weeks (2 hours per week) 24 hours
Preparation (Lectures/tutorials/labs) 12 weeks (3 hours per week) 20 hours
Assignment 1 20 hours
Online exercises 12 hours
Assignment 2 20 hours
Self Study/Practice 15 weeks (2 hours per week) 28 hours
Total 150 hours
6b Special needs
Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or UC AccessAbility (formerly the Disabilities Office) as soon as possible so the necessary arrangements can be made.

6c Attendance requirements
Attendance at classes is not compulsory but it you are strongly advised to attend all classes. Students should also be aware that the subject will be examined on material covered in classes, including lectures and tutorials and it is the individual student's responsibility to ensure that they are sufficiently familiar with this material. Attendance at classes is one of the best ways of ensuring this familiarity. While the lecture notes and course materials are available on the subject website, these are intended to be broad outlines of the lectures. Do not make the mistake of assuming that the materials perfectly substitute for class attendance. In this unit there is also a requirement to attend and present your assignment 2 in the laboratory sessions as specified in section 3b.

6d Withdrawal
If you are planning to withdraw please discuss with your unit convener. Please see this link for further information on deadlines.

6e Required IT skills
This unit requires the skills of the learning outcomes of Information Systems in Organisations (6348).

6f Costs
No additional costs will be incurred by students undertaking this unit apart from the normal costs of being a university student.

6g Work Integrated Learning
This subject will include in lectures Work-integrated learning examples from real life problems.

6h Additional information
Announcements made in the class and on the subject website are deemed to be made to all students enrolled in the unit.

7: Student Feedback
All students enrolled in this unit will have an opportunity to provide anonymous feedback on the unit at the end of the Semester via the Unit Satisfaction Survey (USS) which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback on their teaching through an anonymous in-class questionnaire administered through the University's Teaching and Learning Centre (TLC).
8: Authority of this Unit Outline

Any change to the information contained in Section 2 (Academic content), and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of Head of Discipline and a majority of students has been obtained; and if written advice of the change is then forwarded to each student enrolled in the unit at their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.