

Corporate Database Application and Management – 7862

Unit Outline 2009

Faculty of Information Sciences and Engineering

University of Canberra

*Australian Government Higher Education (CRICOS)
Registered Provider number: #00212K*

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School of Information Sciences and Engineering

Business, Law & Information Sciences

University of Canberra

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This Unit Outline must be read in conjunction with:

- a) *Studying at the University of Canberra: A Guide to Policies and Procedures*, 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 <http://www.canberra.edu.au/student-services>
- b) *Guide to Student Services at the University of Canberra*, and is available at <http://www.canberra.edu.au/student-services>
- c) Any additional information specified in section 6f.

1: General Information

- 1a Unit title**
Corporate Database Application and Management
- 1b Unit number**
7862
- 1c Semester and year offered**
Semester 2, 2009
- 1d Credit point value**
3
- 1e Unit level**
Postgraduate
- 1f Name of Unit Lecturer and contact details (including telephone and email)**
Robert Mala
Room no. 11A54
Ph: 6201 5924
rob.mala@canberra.edu.au

Name of Unit Convener and contact details (including telephone and email)

Dr. Girija Chetty

Room no. 11C48

Ph: 6201 2512

girija.chetty@canberra.edu.au

Name of Unit Moderator and contact details (including telephone and email)

Prof. Dharmendra Sharma

Room no. 11B14

Ph: 6201 2153

Dharmendra.Sharma@canberra.edu.au

1g Administrative contact details (including name, location, telephone and email)

School Office

Room no. 11B14

School of ISE,

Ph: 6201 2153, 6201 2417

ise@canberra.edu.au

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| 2: Academic Content |
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2a Unit description and learning outcomes

To provide knowledge, understanding and practical skills in relation to:

- Using DB2 as an efficient and secure enterprise level database, operating in a mainframe environment;
- Developing SQL and programs that work efficiently with complex databases.

Conceptual Development:

- Understanding of relational databases and their functionality.
- Understanding of the architecture and anatomy of DB2 for z/OS.
- Understanding of the activities of database administration.
- Understanding of how to define, manipulate, and control DB2 for z/OS objects.
- Understanding of how to develop programs to access DB2 for z/OS.

Practical Outcomes:

- Develop SQL to define, manipulate, and control objects on DB2 for z/OS.
- Develop COBOL programs to access and manipulate data on DB2 for z/OS.
- Use Commands, Utilities and Tools to administer databases on DB2 for z/OS.

2b Prerequisites and/or co-requisites

Prerequisites: 7854 Mainframe Systems 1,
7855 Mainframe Application Development 1

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 one lecture, tutorial and laboratory session per week for a total of two and a half hours per week. Laboratory exercises will be placed on the unit web site and/or provided during labs. The lecturer will provide a dot point summary of the topics of lectures on the unit website. The lectures are based on the required readings / text listed in section 4a below.

3b Schedule of topics/lectures/tutorials/practicals/field classes by day

The following schedule is subject to change. For an up-to-date schedule, please see the unit website <http://teaching.canberra.edu.au/>

| Week | Lecture Sessions | Tutorial and Laboratory Sessions | Other |
|------|--|--|------------------|
| 1 | DB2 Overview – Introduction & DB2 Concepts | Introduction & Simple SQL Queries | |
| 2 | DB2 Anatomy – System Overview & DB2 System Structures | Retrieving Data from Multiple Tables & Scalar Functions and Arithmetic | |
| 3 | DB2 Anatomy – Database Services & DB2 Environment | Column Functions and Grouping & UNION | |
| 4 | DB2 Anatomy – DB2 Attachment Facilities & Workload Management | Using Subqueries & Maintaining Data | |
| 5 | DB2 Anatomy – Distributed Data Facility | DB2 Concepts & Program Structure 1 | Assignment 1 due |
| 6 | DB2 Application Development – SQL Overview & DB2 Interface | Program Preparation & Program Structure 2 | |
| 7 | DB2 Application Development - SQL Journeys & Database Implementation | Recovery and Locking concepts & Dynamic SQL Introduction | |
| 8 | Non-teaching period | | |
| 9 | Non-teaching period | | |
| 10 | DB2 Application Development – Application Implementation | Managing Test Data & Performance Considerations | |
| 11 | DB2 System Administration – Concurrency Control & DB2 Security | Introduction & Create Objects | Assignment 2 due |
| 12 | DB2 System Administration – Logging and Recovery & Startup and Restart | Join & CASE, CAST and Summary Tables | |
| 13 | DB2 System Administration – Commands, Utilities and Tools | Using Subqueries & Scalar Functions | |
| 14 | DB2 Performance Topics – System Performance & Fundamental Query Optimization | Table Expressions and Recursive SQL & UDTs/UDF and Performance | |
| 15 | Unit Review | | Assignment 3 due |

4: Unit Resources

4a Lists of required texts/readings:

Required texts/readings are available on the Unit Website.

- *DB2 for z/OS Fundamentals*, 2008, PDF
- *DB2 SQL Workshop*, 2007, PDF
- *DB2 SQL Workshop for Experienced Users*, 2002, PDF
- *DB2 UDB Programming Workshop for z/OS*, 2007, PDF

Supplementary Reading:

Supplementary readings are available on the Unit Website.

- Introduction to DB2 Version 9.1 for z/OS (SC18-9847)
- DB2 Version 9.1 for z/OS Administration Guide (SC18-9840)
- DB2 Version 9.1 for z/OS Installation Guide (GC18-9846)
- DB2 Version 9.1 for z/OS Performance Monitoring and Tuning Guide (SC18-9851)
- DB2 UDB for z/OS V8 SQL Reference (SC18-7426)
- DB2 UDB for z/OS V8 Command Reference (SC18-7416)
- DB2 UDB for z/OS V8 Utility Guide and Reference (SC18-7427)
- DB2 UDB for z/OS V8 Application Programming Guide and Reference for Java™ (SC18-7414)
- DB2 Version 9.1 for z/OS Application Programming and SQL Guide (SC18-9841)
- Enterprise COBOL for z/OS Programming Guide Version 3 Release 4 (SC27-1412)
- Enterprise COBOL for z/OS Language Reference Version 3 Release 4 (SC27-1408)

4b Materials and equipment

IBM Mainframe access, provided by Global Online Learning Pty Ltd
Vista tn3270 terminal emulator

4c Unit website

The subject website can be accessed through Moodle. To access the Moodle site, you need to:

First open URL <http://teaching.canberra.edu.au/> and log into Moodle using your student ID (u#####) and your network password.

Students are advised to regularly check the subject website (at least twice each week) for the latest information on the subject material and other information including important announcements.

5: Assessment

5a Assessment overview

| Assessment Item (including exams held in the exam period) | Due Date of Assignments | Weighting (Total to equal 100%) |
|---|-------------------------|---------------------------------|
| Assignment 1 - Assessed tasks using Weeks 1 - 4 | Friday - Week 5 | 20 |
| Assignment 2 - Assessed tasks using Weeks 5 - 10 | Friday - Week 11 | 25 |
| Assignment 3 - Assessed tasks using Weeks 11 - 14 | Friday - Week 15 | 20 |
| Final Examination (Open Book) | Exam Timetable | 35 |

5b Details of each assessment item

Assignment 1 - This assignment is to be done by each student individually. It will comprise of questions and the results of activities to be undertaken on the mainframe computer system. This assignment is base on topics covered in weeks 1 – 4 and is due on the Friday of week 5.

Assignment 2 - This assignment is to be done by each student individually. It will comprise of questions and the results of activities to be undertaken on the mainframe computer system. This assignment is base on topics covered in weeks 5 – 10 (includes 2 non-teaching weeks) and is due on the Friday of week 11.

Assignment 3 - This assignment is to be done by each student individually. It will comprise of questions and the results of activities to be undertaken on the mainframe computer system. This assignment is based on topics covered in weeks 11 – 14 and is due on the Friday of week 15.

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

5c Special assessment requirements

1. To pass this unit, students must satisfy the following conditions:
 - Complete every item of the assessment (Assignments 1 – 3, and final exam).
 - Achieve at least 50% as a combined total of the available marks for the three assignments; and
 - Achieve at least 50% of the available marks of the Final Examination.
2. All assignments are required to be submitted by the due date. A request for an extension before the assignment due date can be made to the Unit Lecturer. The request must be made in writing and detail the reason(s) for requiring an extension. The granting of an extension is the sole discretion of the Unit Lecturer. The late submission of an assignment will incur a 10% penalty of the total marks for the assignment, per day. If there is any doubt with regard to the requirements of any of the assignments or the assessment procedure, the onus for clarifying the matter rests with the student.
3. In the case of illness, misadventure or unavoidable commitments at the scheduled time of an examination, students should contact the Unit Convener as soon as possible (well in advance).
4. Grades: For final assessment in the subject, the result will be one of the following grades: HD, DI, CR, P or NX.

Performing satisfactorily in the assignments means there are no outstanding submissions at the end of teaching period. Subject to meeting the above requirements, assigned grades will depend on the Assignment Mark (AM) and Examination Mark (EM) where:

Assignment Mark (AM) = (A1 + A2 + A3) converted to percentage.

Examination Mark (EM) = (E1) converted to percentage.

Grades will then be awarded according to the following table:

| Grade | Letter Grade | Percentage in AM and EM components |
|------------------|--------------|------------------------------------|
| High Distinction | HD | AM ≥ 85% AND EM ≥ 85 % |
| Distinction | DI | AM ≥ 75% AND EM ≥ 75 % |
| Credit | CR | AM ≥ 65% AND EM ≥ 65 % |
| Pass | P | AM ≥ 50% AND EM ≥ 50 % |
| Fail | NX | AM < 50% OR EM < 50 % |

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:

http://www.canberra.edu.au/library/research-gateway/research_help/referencing-guides

Other Requirements:

- Students should keep a copy of all assessment items submitted.
- All assignments must be submitted with the completed cover sheet. The cover sheet template is available from the unit website.
- The lecturer reserves the right to question students orally on their submitted work.
- The assessment criterion for answers to theoretical and technical questions is both correctness and appropriate style.

5d Supplementary assessment

Not available in this unit.

5e Text-matching software

Students may be requested to submit text-based assignments electronically to be checked for matching text. Instructions on how to do this and information about the process will be provided at the time of the request.

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| 6: Student Responsibility |
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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 fifteen week semester is assumed to be 150 hours or an average of 10 hours per week. 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 fifteen week semester is assumed to be 300 hours or an average of 20 hours per week.

6b Special needs

Students who need assistance in undertaking the unit because of disability or other circumstances should inform their Unit Convener or the Disabilities Office as soon as possible so the necessary arrangements can be made.

6c Attendance requirements

There will be no roll calls for lectures; however, students are encouraged to make every attempt to attend all scheduled teaching activities. Failing to do so may result in poor understanding and failure of the unit.

6d Required IT skills

See Section 2b

6e Costs

Printing, Photocopying, Web access, and Consumables

Information about the DEST guidelines on student charges for HECS students can be found on OSIS.

6f Additional information

Any student having difficulty understanding this unit outline should contact the Unit-Lecturer for clarification.

All students should consult the unit website regularly (at least weekly). The unit web site will be used to formally communicate announcements, provide required and supplementary readings, and detail unit and assignment schedules.

Any student with a poor command of either written or spoken English will face hardship in this unit. Students with poor English skills are advised to contact Student Administration. The Academic Skills Program runs Study Skills Workshops for students with study problems (including English).

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| 7: Student Feedback |
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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 which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback through an anonymous questionnaire administered through the University's Centre for the Enhancement of Learning Teaching and Scholarship (CELTS).

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| 8: Authority of this Unit Outline |
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Any change to the information contained in Section 2 (Academic content), Section 3 (Delivery of Unit and timetable) and Section 5 (Assessment) of this document, will only be made by the Unit Convener if the written agreement of staff 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/her to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convener.