Course Outline

INFS5992 Data Management

Session 1, 2007

THE UNIVERSITY OF NEW SOUTH WALES

FACULTY OF BUSINESS

School of Information Systems, Technology and Management

1. Introduction

1.1 Role and Relevance of the Course

Information systems are systems that use information technology to capture, transmit, store, retrieve, manipulate or display information used in one or more business process. Databases represent a major component of Information Systems. They frequently contain a collection of information that has been gathered over a long period of time. Database systems are used to store, manipulate and retrieve data in most business sectors, including finance, healthcare, education, government and libraries.

The Data Management (INFS5992) course is one of the core courses in Information Systems curriculum, offered by the School of Information Systems, Technology and Management. This course provides an introduction to the concepts, design techniques and technology for the storage and management of data that is essential knowledge for anyone embarking on a career in business analysis, systems analysis, system development, computer programming and system engineering.

I hope this course develops you professionally, challenges you educationally, and offers you some fun and excitement.

1.2 Aims of the Course

The aims of this course are to:

- Provide a context or background for the database development process, and in particular relational database design
- Teach the principles of conceptual and logical modelling in database design
- Acquire skills in using database management systems
- Obtain experience in small self-directed groups applying interpersonal communication, project management and quality assurance skills.

1.3 Learning Outcomes

On successful completion of this course students will:

1. Understand the principles of the high-quality relational database design,
2. Develop skills in visual & conceptual modelling and database design;
3. Recognise different approaches for a data modelling and appreciate their complexity.
4. Understand how database development process fits into overall information systems development process
5. Acquire exercise skills in a number of data modelling and design techniques.
6. Develop a simple system using the Microsoft Access database management system.

7. Appreciate issues and responsibilities surrounding database design, implementation and use
8. Acquire experience and skills in technical writing and systems documentation.
9. Gain experience with working within a team, scheduling, and team management.

1.4 Teaching and Learning Strategies

The course consists of one three hour combined lecture/tutorial session each week. Some weeks the lecture (no tute) may extend to three hours. Some weeks will also include a laboratory session within the three-hour session. The primary vehicle for students to achieve the learning outcomes listed above is lectures, tutorials and laboratory sessions.

Your lecturer will work through short case studies and this will be a unique opportunity for you to observe database design techniques put into practice. You are also encouraged to seek clarification by asking questions during lectures. In general, tutorials provide a short recap of the key concepts from lecture and the opportunity for you to apply these concepts to your assignment project. In this way, your assignment is considered as both a learning and an assessment opportunity.

In this course students will learn entity relationship modelling. Students are required to learn crow's foot ER notation from the textbook -- other notations are not acceptable. In this course we will use SQL-92 as a database language.

2. Student Assessment

	Assessable Components	**Percentage**	**Due Date**	**Learning Outcomes Assessed**
1.	Tutorial (Homework)	10%	Random	1, 2, 3, 4, 5, 8, 9
2.	Database Assignment	Part1: 10% Part2: 20%	Part1: Week 6 Part2: Week11 Demo is in week 12	1, 3, 4, 5, 6, 7, 8, 9
3.	Final Exam	60%	Examination Period	1, 2, 3, 4, 5, 6, 7, 8, 9

2.1 General Assessment Issues

To receive a pass grade in this course, you must meet ALL the following criteria:

- Attain an overall mark of at least 50%
- Attend at least 80% of all scheduled classes
- Attain a satisfactory performance in each component of the course. A mark of 50% or higher is normally be regarded as satisfactory
- Attain a mark of 50% at least in the final exam.

2.2 Assignment

This is a project which requires the design & implementation of database using Microsoft Access. It consists of two components: Part 1 requires you to develop an Entity Relationship diagram and a data dictionary for the project; Part 2 requires the development of a logical design, normalization, implementation of the project and a project management report.

The database design assignment is a team project with a team size of 2 persons. The mark assigned to each member of the group will be scaled based on peer assessment of each member's contribution to the task. Team members are expected to work in a harmonious and

professional fashion. It is up to you to manage the group process so that each person carries out an equal amount of work

Details of the database assignment will be released on the course website early in the course. Students will present a walkthrough of their database assignment in a computer lab during Weeks 12. Students will be required to learn MS Access 2003 by themselves. MS Access 2003 will be used to mark assignments unless alternative arrangements are made with your lecturer. The database assignment is due on the day of your normal lecture in the Week 11.

2.3 Homework and Laboratory Exercises

Homework and Laboratory exercises will be set most weeks, and answers should be prepared by each student for submission the next week. Student responses to three of homework exercises will be collected during the session at random (without warning). These exercises will be marked and then returned to students. Only the best two homework exercises (out of three) will be counted towards to tutorial assessment. Selected solutions to homework exercises will be given in the class in the week they are due, students should rely on these solutions for feedback on correctness.

There will be five lab exercises that will help students to develop their MS Access skills. The reference by Shelly, Cashman, Pratt & Last (see the references) will provide an introduction to most concepts required for the assignment. Students are strongly recommended to submit the lab exercises as they provide the necessary skills to them to successfully complete their Access Project. Late homework or lab exercises will only be accepted with supporting documentation (doctor's certificate, letter from employer etc).

Homework and laboratory exercises may be discussed in groups, but individual solutions must be prepared and submitted (identical printouts are not acceptable). A *Homework-Laboratory Exercise Title Page* is to be attached to work submitted. The homework and laboratory exercises are due on the day of your normal lecture in the week specified.

2.3 Examination

A formal closed book examination is conducted during the examination period. You must plan on being available for the full examination period to attend the final exam. In addition, you should also ensure that you will be available for a supplementary examination in the event of illness or misadventure. All material covered in lectures, tutorial and readings are examinable.

2.4 Special Consideration

Information and School policy about special consideration and supplementary examinations can be found from the following website: http://www.sistm.unsw.edu.au/

UNSW policy and process for Special Consideration applies (see https://my.unsw.edu.au/student/atoz/SpecialConsideration.html). Specifically:

- Applications for special consideration (including supplementary examinations) must go through UNSW Central administration (within 3 working days of the assessment to which it refers) – applications will **not** be accepted by teaching staff;
- Applying for special consideration does not automatically mean that you will be granted additional assessment or that you will be awarded an amended result;
- If you are making an application for special consideration (through UNSW Central Administration) please notify your Lecturer in Charge;
- Please note: a register of applications for Special Consideration is maintained. History of previous applications for Special Consideration is taken into account when considering each case.

3. Student Responsibilities

3.1 Class Attendance

The standard university rule applies to class attendance. Namely, you are required to attend at least 80% of classes. In the event of illness or misadventure, you must provide your lecturer with documentary evidence. It is the responsibility of the students to obtain and read all handouts and lecture material.

3.2 Assignment, Homework and Lab Exercise Submissions

- All work submitted is expected to be clear, accurate, well-structured, grammatically correct, neat work, which does not contain spelling errors. All submitted work should be suitable for presentation to senior management in an organization. Handwritten assignments and homework exercises are not acceptable.
- The lab exercises and database assignments are due on the day of your normal lecture in the week specified.
- Late submission of assignments will incur a penalty of 10% of the maximum assessment mark per day including weekends and public holidays. For example, as assignment worth 20% will always attract a 2-mark penalty per day. An extension to the time of submission will only be granted under exceptional circumstances by the Lecturer-in-charge. In all cases documented evidence **must** be provided.
- Partial submission of your assignments, homework or lab exercises will not be accepted

3.3 Responsibility to Keep Informed

It is your responsibility to keep informed on breaking news regarding the course. Typically, this information is published on the course website. Occasionally, correspondence of an individual nature is required and e-mail may be sent to your official UNSW e-mail account. For more details refer to the "Course Website".

You should also be familiar with the specific policies of the school found on the school website. This is particularly important for students seeking post examination consultations with staff or applications for special consideration.

3.4 Expected Workload

Information Systems is a discipline undergoing continuous change. Technologies and practices change frequently and those of use involved in the areas of information technology and information management need to be able to understand fundamental IS concepts and to relate them to changes as they occur. This is a postgraduate course; participants will be expected to prepare thoroughly for the weekly sessions and to read broadly on the course. Over commitment has been a cause of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities. Students are expected to invest approximately 8-10 hours per week in the following activities:

- Attend class 3 hrs per week
- Examination preparation & reading .....2 hrs per week
- Group meetings in addition to class .....2 hrs per week
- Completing homework, laboratory exercises ..... 1 hr per week
- Contribution to assignments .....2 hrs per week

3.5 Academic Misconduct and Plagiarism

You are reminded that the University regards academic misconduct as a very serious matter. Because of the circumstances in individual cases the period of exclusion can range from one session to permanent exclusion from the University. The following are some of the actions, which have resulted in students being found guilty of academic misconduct:

1. Taking unauthorised materials into an examination;
2. Submitting work for assessment knowing it to be the work of another person;
3. Improperly obtaining prior an examination paper and using it in the examination.

The University regards plagiarism as a form of academic misconduct, and has very strict rules regarding plagiarism. For full information regarding policies, penalties and information to help you avoid plagiarism see: http://www.lc.unsw.edu.au/plagiarism/index.html

Plagiarism is the presentation of the thoughts or work of another as one's own.* Examples include:

- direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement;
- paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- piecing together sections of the work of others into a new whole;
- presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,
- claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.†

Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.

The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does *not* amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks, and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at:

www.lc.unsw.edu.au/plagiarism

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- correct referencing practices;
- paraphrasing, summarising, essay writing, and time management;
- appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.

Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

* Based on that proposed to the University of Newcastle by the St James Ethics Centre. Used with kind permission from the University of Newcastle
† Adapted with kind permission from the University of Melbourne.

3.6 Key Dates for Session 1 2007

It is your responsibility to ensure that:

1. You are recorded by the University as being correctly enrolled in all your courses. The last day for students to discontinue without financial penalty is **March 31** and the last day to discontinue without academic penalty is **Friday 27 April.**
2. You have successfully completed all prerequisite courses. Any work done in courses for which prerequisites have not been fulfilled will (unless an exemption has been granted) be disregarded, and no credit given nor grade awarded.
3. You organise your affairs to take account of examination and other assessment dates where these are known. Be aware that your final examination may fall at any time during the session's examination period. The scheduling of examinations is controlled by the University administration. No early examinations are possible. The examination period for Session 1, 2007 falls between **15 June and 3 July**.
4. When the provisional examination timetable is released (**May 8**), ensure that you have no clashes or unreasonable difficulty in attending the scheduled examinations. The final examination timetable is released on **29 May**.
5. You keep the University informed of all changes to your contact details.
6. You make a copy of all work submitted for assessment, and keep returned marked assignments and essays.

A full list of UNSW Key Dates is located at:
https://my.unsw.edu.au/student/resources/KeyDates.html

3.7 General Conduct and Behaviour

You are expected to conduct yourself with consideration and respect for the needs of your fellow students and teaching staff. Conduct which unduly disrupts or interferes with a class, such as ringing or talking on mobile phones, is not acceptable and students may be asked to leave the class. More information on student conduct is available at: www.my.unsw.edu.au

4. Student Responsibilities

4.1 Course Website

WebCT Vista will be utilised for all course communications. Visit this page to learn about lecture notes, assignments & due dates, frequently asked questions, and more about the course. Please check WebCT Vista regularly as this is where we communicate urgent notices when needed. PLEASE NOTE – only urgent (and very short) enquiries will be answered via e-mail, or telephone. Please attend consultation times or make an appointment if you need to discuss issues in detail.

4.2 Education Development Unit

Additional learning support, tailored to the needs of FCE students, is available from the Education Development Unit (EDU) in the Faculty. The EDU offers a range of services for FCE students including:

- Academic skills workshops run throughout the session;

- Printed and on-line study skills resources e.g. referencing guide, report writing and exam preparation;
- A drop-in resource centre containing books and audio visual material that can be borrowed;
- A limited consultation service for students with individual or small group learning needs.

More information about the EDU services including on-line resources, workshop details and consultation request forms are available from the EDU website. EDU services are free and confidential and are available to students of the Faculty of Commerce and Economics. EDU contacts and location are:

EDU Web: http://education.fce.unsw.edu.au

EDU Location: Room 2039, Level 2 Quadrangle Building

4.3 Other UNSW support

In addition to the EDU services, the UNSW Learning Centre provides academic skills support services for students. The Learning Centre is located on Level 2 of the Library and can be contacted by Phone: 9385 3890 or through their website: http://www.lc.unsw.edu.au/. Students experiencing problems of an academic or personal nature are encouraged to contact the Counselling Service at UNSW. This service is free and confidential and run by professional counsellors. The Counselling Service is located on Level 2, Quadrangle East Wing, and can be contact on 9385 5418.

It is important that all students are familiar with University policies and procedures in relation to such issues as:

- **Examination procedures** and advice concerning illness or misadventure https://my.unsw.edu.au/student/academiclife/assessment/examinations/examinationrules.html
- **Occupational Health and Safety** policies and student responsibilities; http://www.riskman.unsw.edu.au/ohs/Policies%20&%20Procedures/UNSW%20OHS%20Accountability.pdf

5. Course Staff

5.1 Lecturer

Title	Name	Room	Email
Lecturer in charge	Dr. Aybüke Aurum	Quad 2072	aybuke@unsw.edu.au

5.2 Consultation Times

Your lecturer will inform the specific consultation times in Week 1. Your designated lecturer is your main point of contact for any questions about the course and assignments. Questions regarding assignments will be dealt with in the weekly lecture sessions.

As a security measure, your lecturer may not receive e-mails from anonymous accounts such as yahoo or hotmail. For this reason you should always use your official UNSW student account or your work e-mail. Also, e-mail correspondence should include your student number and your group number.

6. Resources

6.1 Text

1. Hoffer, JA., Prescott, MB., McFadden, FR. (2007): *Modern Database Management.* Published by Pearson Education International (Prentice Hall), 8th edition (5-7 editions are also alright)
2. Shelly GB, Cashman TJ, Pratt PJ, and Last MZ (2003): Access 2003 – Comprehensive Concepts & Techniques. Course Technologies, USA.

6.2 Additional References

1. Rob P and Coronel C. Database Systems: Design, Implementation, and Management. Published by Thomas Course Technology, 7th edition, 2007. ISBN: 1-4188-3593-5.
2. Connolly, T., Begg, C. (2002): Database Systems: A Practical Approach to Design, Implementation, and Management. Pearson Education.
3. Elmasri, R., Navather, SB. (2000): *Fundamentals of Database Systems*. Addison Wesley.
4. Ramakrisnan, R., Gehrke, J. (2000): Database Management Systems. McGraw Hill.
5. Rob, P., Coronel, C. (2000): *Database Systems: Design, Implementation, and Management.* Course Technologies, Thomson Learning.
6. Silberschatz, A., Korth, HF., Sudarshan, S. (1999): *Database System Concepts*. McGraw Hill.
7. Satzinger, JW.; Orvik, TU. (2001): *The Object-Oriented Approach: Concepts, System Development, and Modeling with UML*. Course Technology, Thomas Learning, Australia

7. Continual Course Improvement

Each year feedback is sought from students and other stakeholders about the courses offered in the School and continual improvements are made based on this feedback. UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process (http://www.ltu.unsw.edu.au/ref4-5-1_catei_process.cfm) is one of the ways in which student evaluative feedback is gathered. Significant changes to courses and programs within the School are communicated to subsequent cohorts of students'.

8. Course Schedule

Wk	Reading	Topics	Comment & Deadlines
1	Chap. 1	Database Environment	
2	Chap. 3	Modelling Data in Organization	
3	Chap. 4	The Enhanced ER Model and Business Rules	Lab Exercise-1: Visual Thought is ***due***.
4	Chap. 5	Logical Database Design and the Relational Model	Lab Exercise-2: Introduction to Microsoft Access is ***due***
5	Chap. 5	**EDU lecture (30 min)** Normalization	Lab Exercise-3: Microsoft Access Practice – Creating Tables is ***due***
6	Chap. 5	Normalization Exercises	Assignment Part-1: ER and DD is ***due***.
Semester Break			
7	Chap 7&8	SQL & Advanced SQL	
8	Chap 7&8	SQL & Advanced SQL	Lab Exercise-4: Exploring Access Queries is ***due***.
9	Chap 6&2	Physical Database and Database Development Process	Lab Exercise-5: Microsoft Access Practice- Queries & Reports, is ***due***
10		**EDU lecture (30min)** **Lab**	
11	Chap 14	Object Oriented Data Modelling	Assignment Part-2: Database Implementation and Report is ***due***
12		**Lab**	Demonstration
13	Chap. 11&12	Data and Database Administration and Data Warehousing	
14	---	Overview & Sample Exam	

***The order of topics is subject to change