# Course Outline

# INFS5992 Data Management

# Session 2, 2004

THE UNIVERSITY OF NEW SOUTH WALES

School of Information Systems, Technology and Management

## 1. Introduction

This is the initial handout for Data Management (INFS5992) which provides details of the content of the course and how your work will be assessed, the proposed lecture, and tutorial program and reference material. I hope this subject develops you professionally, challenges you educationally, and offers you some fun and excitement.

### Objectives

This course provides an introduction to the concepts, design techniques and technology for the storage and management of data. On successful completion of this course students will:

- Understand the principles of the high-quality relational database design,
- Develop skills in visual & conceptual modelling and database design;
- Recognise different approaches for a data modelling and appreciate their complexity.
- Acquire exercise skills in a number of data modelling and design techniques.
- Develop a simple system using the Microsoft Access database management system.
- Appreciate issues and responsibilities surrounding database design, implementation and use
- Acquire experience and skills in technical writing and systems documentation.
- Gain experience with working within a team, scheduling, and team management.

## 2. Academic Staff

| Staff | Name | Room | Email |
|---|---|---|---|
| Lecturer in charge | Aybüke Aurum | Quad 2072 | aybuke@unsw.edu.au |

## 3. Consultation Times

Your lecturer will advise you of 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.

If you experience a problem in the course (due to course materials or assignments, your work commitments, health or any other reason) which is likely to interrupt your attendance in class or delay submission of assignments then please contact your lecturer or

the lecturer-in-charge. Please do contact us as soon as problem arises we may be able to help and save a lot of anxiety on your part.

## 4. Course Arrangements

The course consists of one three hour combined lecture/tutorial session each week. Some weeks the lecture may extend to three hours. Some weeks will also include a laboratory session within the three-hour session. You are expected to attend the class session in which you enrol, as your marks will be recorded according to class enrolments. It is the responsibility of the students to obtain and read all handouts and lecture material.

## 5. Learning Experience

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. In addition to attending lectures each week it is expected that students will devote **6-7 hours per week outside of class time** to the course. This time will include activities such as: reading textbook chapters, lecture notes and other relevant materials in preparation for lectures; completing tutorial exercises; completing laboratory exercises; learning how to use Microsoft Access 2003; completing assignment work; and revising work covered in previous lectures. In periods where you need to complete assignments or prepare for examinations the workload may be greater. 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.

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.

## 6. Assessment

| | **Assessable Components** | **Percentage** | **Due Date** |
|---|---|---|---|
| 1. | Tutorial (Homework) | 10 % | Random |
| 2. | Database Assignment | Part1: 5%<br>Part2: 15% | Part1: Week 6<br>Part2: Week11<br>Demo is in week 12 |
| 3. | Final Exam | 70 % | Examination Period |

### Tutorial (Homework) and Laboratory Exercises

Tutorial 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 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 exercises (out of three) will be counted towards to tutorial assessment. Selected solutions to tutorial exercises will be given in the class in the week they are due, students should rely on these solutions for

feedback on correctness. Students are strongly recommended to submit the lab exercises as they provide the necessary skills to them to successfully complete their Access Project. Late tutorial or lab exercises will only be accepted with supporting documentation (doctor's certificate, letter from employer etc). Tutorial and laboratory exercises may be discussed in groups, but individual solutions must be prepared and submitted (identical printouts are not acceptable). A *Tutorial-Laboratory Exercise Title Page* is to be attached to work submitted. The tutorial and laboratory exercises are due on the day of your normal lecture in the week specified.

### Database Assignment

The database design assignment is a team project with a team size of 3-4 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. 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. 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.

## 7. General Assessment Issues

- In order to pass this course, you must attain an overall mark of at least 50%. A satisfactory performance is required in each component of the assessment. A mark of 45% or lower in a component would normally be regarded as unsatisfactory. There are three assessed components for this course. These are tutorial (homework), database assignment and the final exam. Each component of the course may be scaled.
- 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. The major assignment shall be typed.
- All work submitted must have a title page attached (see last pages of starter-kit). Pages should be top-left corner stapled.
- 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. 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.

## 8. Text

The major text for this subject covers all of the material on database modelling, relational theory and design.

- Hoffer, JA., Prescott, MB., McFadden, FR. (2005): *Modern Database Management*. Pearson Education International (Prentice Hall), 7th edition. ISBN: 0-13-127388-4

For the project work, you will need to learn and use Microsoft Access, running on Windows NT workstations. The book that will help you to learn the most important topics of the Microsoft Access database management system is:

- Shelly GB, Cashman TJ, Pratt PJ, and Last MZ (2003): Access 2003 – Comprehensive Concepts & Techniques. Course Technologies, USA.

The above two books come bound together as one package which is considerably cheaper than buying both books separately.

### Additional References


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


## 9. Course Website

Visit this page to learn about lecture notes, assignments & due dates, frequently asked questions, and more about the course. It is expected that students look at this website at least once a week. The login and password for this web site is your studentID and your UniPass code. The URL for this website is:

http://sistm.web.unsw.edu.au/courses/infs5992

## 10. School Policies

Refer to the School of Information Systems, Technology and Management web site for information on School Policies:

http://www.sistm.unsw.edu.au/policies

## 11. The Educational 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.

### Contacts and Location:

EDU Web: http://education.fce.unsw.edu.au
EDU Location: Room 2039, Level 2 Quadrangle Building

EDU services are free and confidential and are available to students of the Faculty of Commerce and Economics.

### 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.

## 12. Plagiarism and Academic Misconduct

Plagiarism entails taking and using as one's own, the thoughts or writings of another without acknowledgement including:

(a) where paragraphs, sentences, a single sentence or significant part of a sentence which are copied directly, are not enclosed in quotation marks and appropriately footnoted;
(b) where direct quotations are not used, but ideas or arguments are paraphrased or summarised, and the source of the material is not acknowledged either by footnoting or other reference within the text of the paper; and
(c) where an idea, which appears elsewhere in print, film or electronic medium, is used or developed without reference being made to the author or the source of the idea.

More detailed information can be found at the following URLs

http://www.lc.unsw.edu.au/onlib/plag.html

https://my.unsw.edu.au/student/academiclife/assessment/AcademicMisconductStudentMisconduct.html

Students are reminded that the University regards academic misconduct as a very serious matter. Students found guilty of academic misconduct are usually excluded from the University for 2 years. However, 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 guilty of academic misconduct in recent years.

1. Taking unauthorized materials into an examination;
2. Submitting work for assessment knowing it to be the work of another person;
3. Improperly obtaining prior knowledge of an examination paper and using that knowledge in the examination.
4. Failing to acknowledge the source of material in an assignment

## 5. Course Schedule

| Wk No | Date | Reading | Topics | Comment & Deadlines |
|---|---|---|---|---|
| 1 | 28 July | Chap. 1 | Database Environment | |
| 2 | 4 Aug | Chap. 3 | Modelling Data in Organization | |
| 3 | 11 Aug | Chap. 4 | The Enhanced ER Model and Business Rules | Lab Exercise-1: Visual Thought is ***due***. |
| 4 | 18 Aug | Chap. 5 | **EDU Lecture (30 min)**<br>Logical Database Design and the Relational Model | Lab Exercise-2: Introduction to Microsoft Access is ***due*** |
| 5 | 24 Aug | Chap. 5 | Logical Database Design and the Relational Model -- Normalization | Lab Exercise-3: Microsoft Access Practice – Creating Tables is ***due*** |
| 6 | 1 Sept | Chap. 5 | Normalization Exercises | Assignment Part-1: ER and DD is ***due***. |
| 7 | 8 Sept | Chap 7&8 | SQL & Advanced SQL | |
| 8 | 15 Sept | Chap 7&8 | SQL & Advanced SQL | Lab Exercise-4: Exploring Access Queries is ***due***. |
| 9 | 22 Sept | Chap 6&2 | **EDU lecture (30min)**<br>Physical Database and Database Development Process | Lab Exercise-5: Microsoft Access Practice- Queries & Reports, is ***due*** |
| **Semester Break** | | | | |
| 10 | 6 Oct | | **Three hours lab** | |
| 11 | 12 Oct | Chap 14 | Object Oriented Data Modelling | Assignment Part-2: Database Implementation and Report is ***due*** |
| 12 | 20 Oct | | Lab | Demonstration |
| 13 | 27 Oct | Chap. 11&12 | Data and Database Administration and Data Warehousing | |
| 14 | 3 Nov | --- | Overview & Sample Exam | |

***The order of topics is subject to change