

Maryland in Europe Graduate Programs
Bowie State University

Database Management and Decision Systems

INSS 550

2002-2003/Term 5

Lakenheath, England

10 June to 31 July

Tuesdays & Thursdays, 18:00 to 21:00

Instructor: Grant Wiswell
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Consultation: Before and after classes, and by appointment. Further availabilities will be discussed at the beginning of the term.

Course Description: *Prerequisite: Either INSS 510, INSS 520, INSS 530, or permission of the instructor.* Examines database concepts and practices as they relate to business environments. Various database structures including relational and object-oriented are discussed. Concepts of distributed database architecture are explored. Design, development, and implementation of databases are examined. Organizational issues concerning the implementation of databases and the role of data in the decision-making process are examined. Decision support system architecture is reviewed with emphasis on the database component. Issues of intelligent databases are discussed. A database project is required.

Course Goals/Objectives: At the conclusion of this course the student will understand and be able to explain:

1. Database concepts and practices
2. The relational database model
3. Other database models – hierarchical, network, object-oriented etc.
4. Design development and implementation
 - a. Entity Relationship Diagrams (ERD)
 - b. Relational schema
 - c. Table normalization
 - d. Structured Query Language (SQL)
 - e. ANSI/SPARC 3-level architecture – subschemas
 - f. Other design methods
5. Concepts of distributed database architecture
6. Two- and three- tier database architectures
7. Internet database development
8. Concurrency control and transaction management
9. Security of databases
10. Organizational issues – database administration
11. Role of data and information in decision making

Text: Rob, P., and Coronel, C. (2002). *Database Systems: Design, Implementation, and Management* (5th ed.). Boston: Course Technology.

Grading Information: Grades for this course will be assigned as follows:

A	90% +	C	70 – 79%
B	80 – 89%	F	Below 70% F(a) or regular non-attendance F(n)

Course Requirements:

Homework Assignments	25%
Database Project	25%
Quiz	5%
Midterm Examination:	20%
Final Examination:	25%

Project Description:

A term project is required, which will involve modeling, designing and implementing a database, using one of the currently available languages or DBMS software packages. In addition, students will explain the operational and managerial use of their database, and where its technical aspects fit in the current state of the industry. At the end of the term, students will submit a printout and/or disk of their project, and will be expected to discuss it, either with the class or with the instructor. The database project is usually an individual effort, although group projects of larger database systems are feasible.

Students will need to use database software to complete the project and perhaps the homework. For this, students may use a University computer lab or another computer of their choice. During the first week of class, we will discuss various software packages and ways of obtaining them.

Course Standards

Exams will cover both text and lectures and will consist mainly of definitions, short answers and essay questions. Both the midterm and final exams will include an essay question of the type found in the MIS Graduate program comprehensive exams.

Homework assignments will give students experience in the technical aspects of database management. There will also be one homework assignment involving research; the graduate students will present their research findings to the class.

Class attendance is expected. Students are responsible for all material covered during lectures and discussions, as well as assigned textbook readings. Class participation is encouraged, especially when discussing issues where there are differing sources of information and points of view. In order to have lively and effective class discussions, students should read the assigned material and think about it before class.

Students will be graded primarily on their written work. Good presentation skills are also important, however, and will help contribute to the grade. In both written assignments and verbal contributions, students are encouraged to follow the maxim, "Content before form".

Standards for Written Work

Black ink on white A4 or 8.5x11 paper, in a standard typewriter face such as Courier, or 11- or 12-point Times New Roman. Line spacing double-spaced or 1.5.

No color or graphics, except for (1) charts or maps generated by the student to convey substantive information; or (2) as an artifact of the subject being studied, in support of a point discovered or being argued by the student.

Where there has been research, be sure to acknowledge your sources, using the APA style for footnotes and bibliographical references.

See -- <http://www.umuc.edu/library/guides/apa.html>

Course Schedule

Session	Topics	Assigned readings/ assignments due
1 <i>10 June</i>	Course and class introductions Introduction to File Systems and Databases	Chapter 1
2 <i>12 June</i>	The Relational Data Base Model:	Chapters 2, 3
3 <i>17 June</i>	Normalization	Chapter 4 Assign Homework 1
4 <i>19 June</i>	SQL	Chapter 5 Selection of DB project topics
5 <i>24 June</i>	Review Chapters 1-5 <i>Quiz (after review)</i> Database Design	Homework 1 due Assign Homework 2 Chapter 6
6 <i>26 June</i>	Database Design (continued) Transaction Management	Chapter 6, 9
7 <i>1 July</i>	Transaction Management (continued) Distributed Databases	Chapter 9, 10 DB project outlines due
8 <i>3 July</i>	Review	Homework 2 due
9 <i>8 July</i>	<i>Mid-term Exam</i>	Assign Homework 3
10 <i>10 July</i>	Object-Oriented Databases	Chapter 11
11 <i>15 July</i>	Data Warehousing	Chapter 13 DB project progress reports due
12 <i>17 July</i>	Client-Server Systems Databases in Electronic Commerce Web Database Development	Chapters 12, 14, 15
13 <i>22 July</i>	Database Administration	Chapter 16
14 <i>24 July</i>	Recent Developments in Database Management Presentation of HW3 (graduate research)	
15 <i>29 July</i>	Presentation of database projects Course review	Homework 3 due DB projects due
16 <i>31 July</i>	<i>Final Exam</i>	

Academic Policies:

Please refer to the UMUC Maryland in Europe Graduate Catalog, available online at http://www.ed.umuc.edu/visit/pubs/catalog/grad_02-03.pdf or from your local Education Center, for information on the following:

- Academic Integrity
- Course Load
- Exceptions to Policy
- Grade Appeal Process
- Make-up Examinations
- Nondiscrimination
- Students with Disabilities

CODE OF CIVILITY

To promote a positive, collegial atmosphere among students, faculty, and staff, Maryland in Europe has developed the following Code of Civility:

Respect

Treat all students, faculty, and staff with respect and in a professional and courteous manner at all times and in all communications, whether in person or in written communication (including e-mail).

Kindness

Refrain from using profanities, insults, or other disparaging remarks.

Truth

Endeavor to cite only the truth and not knowingly misrepresent, mischaracterize, or misquote information received from others.

Responsibility

Take responsibility for our own actions instead of blaming others.

Cooperation

Work together with other students, faculty, and staff in a spirit of cooperation toward our common goals of seeking and providing quality education.

Privacy

Strive to uphold the right to privacy and not talk about others.

Nondiscrimination

Respect the differences in people and their ideas and opinions and reject bigotry.

About Your Instructor

Mr. Wiswell received a BA in History from Stanford University and an MA in History from the University of London. He worked in the computer industry for over twenty-five years in marketing, technical and project management positions. He specialized in database consulting, first with hierarchical database management systems, then after 1980, with the relational database model and SQL. While on sabbatical in the U.S. in 2002, he took the Microsoft® course "Programming a SQL Server® 2000 Database".