

CAMPBELL UNIVERSITY
 Department of Math/Information Technology & Security
Syllabus: ITS 345 Database Management
 Semester: **Spring 2009**
 CAMPUS: Main

Note: Students with documented disabilities who desire modifications or accommodations should contact the office of Student Support Services located in the University's High House.

<http://web.campbell.edu/sl/studentservices/index.html>
http://web.campbell.edu/sl/studentservices/_pdf/ds-guide.pdf

COURSE INFORMATION

Course	ITS 345 Database Management
Course Credit	3.0 Credit Hours
Instructor	Umesh C. Varma
Office Location	LF School of Business (Room 217), Campbell University
Office Hours	MWF 12:00-2:30 PM
Phone Number(s)	910-893-1408 (Office) 910-893-1200 (Main) 1-800-334-4111 (Toll Free)
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Address	165 Dr. McKoy Road, Campbell University, Buies Creek, NC 27506
Class Schedule	TU-TH 9:30 - 10:50 a.m.
Class Location	L-F School of Business Room #113
Prerequisite	ITS 200 Internet Applications
Required Textbook	Modern Database Management, 9/E Jeffrey A. Hoffer, Mary Prescott, and Heikki Topi ISBN-10: 0136003915; ISBN-13: 9780136003915 Publisher: Prentice Hall Copyright: 2009 Published: 02/19/2008 http://www.pearsonhighered.com/educator/academic/product/0,3110,0136003915,00.html

CALENDAR

<http://web.campbell.edu/ece/calendar/index.html>

PRIMARY COURSE OBJECTIVE

345 Database Management (3) The structure, design, and development of databases are investigated with emphasis on using the database management software as an integral component of an information system. Emphasis is given to relational databases, object-oriented databases, client-server databases, enterprise data modeling, Internet database environment, and data warehousing.

This course provides sound, clear, and current coverage of concepts, skills, and issues needed for coping with the expanding organizational data resource. It also provides student with the background necessary to successfully implement a wide variety of databases in organizations. The contents of this course provide adequate technical details while emphasizing the management and implementation issues relevant in the Information Technology and Security (ITS) curriculum.

COURSE OUTLINE

Note: Lectures would be delivered in the following sequence either in-class or thru Blackboard.

The Database Environment- Learning Objectives. Introduction. Basic Concepts and Definitions. Traditional File Processing Systems. File Processing Systems at Pine Valley Furniture Company. The Database Approach At Pine Valley Furniture Company. Range of Database Application. Advantages of the Database Approach. Costs and Risks of the Database Approach. Components of the Database Environment.

Database Development Process- Learning Objectives. Introduction. Database Development within Information Systems Development. Database Development Process. Managing the People Involved in Database Development. Three-Schema Architecture for Database Development. Three-Tiered Database Location Architecture. Developing a Database Application for Pine Valley Furniture.

Modeling Data in the Organization- Learning Objectives. Introduction. Modeling the Rules of the Organization. The E-R Model. Entity-Relationship Model Constructs. Relationships. E-R Modeling Example: Pine Valley Furniture Company. Database Processing at Pine Valley Furniture.

The Enhanced E-R Model and Business Rules- Learning Objectives. Introduction. Representing Supertypes and Subtypes. Specifying Constraints in Supertype/Subtype Relationships. EER Modeling Example: Pine Valley Furniture- Entity Clustering, Packaged Data Models, Business Rules Revisited.

Logical Database Design and the Relational Model- Learning Objectives. Introduction. The Relational Data Model. Integrity Constraints. Transforming EER Diagrams into Relations. Introduction to Normalization. Normalization Example: Pine Valley Furniture Company. Merging Relations. A Final Step for Defining Relational Keys.

Physical Database Design and Performance- Learning Objectives. Introduction. Physical Database Design Process. Designing Fields. Designing Physical Records and Denormalization. Designing Physical Files. Using and Selecting Indexes. RAID: Improving File Access Performance by Parallel Processing. Designing Databases. Optimizing for Query Performance.

SQL- Learning Objectives. Introduction. History of the SQL Standard, The Role of SQL in Database Architecture, The SQL Environment, Defining a Database in SQL. Inserting, Updating, and Deleting Data. Internal Schema Definitions in RDBMSs. Processing Single Tables.

Advanced SQL- brief coverage.

The Client/Server Database Environment- Learning Objectives. Introduction. Client/Server Architectures. Three-Tier Architectures. Partitioning an Application. Role of the Mainframe. Using Parallel Computer Architectures. Using Middleware. Establishing Client/Server Security. Client/Server Issues. Database Access from Client Applications. Using Query-by-Example. Using ODBC to Link External Tables Stored on a Database Server. Using JDBC to Link External Tables Stored on a Database Server. Using Visual Basic for Applications (VBA) in Client Applications.

The Internet Database Environment- Learning Objectives. Introduction. The Internet and Database Connection- The Internet Environment. Common Internet Architecture Components. Web-to-Database Tools: Cold Fusion and ASP. XML Overview. Managing Website Data.

Data Warehousing- Learning Objectives. Introduction. Basic Concepts of Data Warehousing. Data Warehouse Architectures. Some Characteristics of Data Warehouse Data. The Reconciled Data Layer. Data Transformation. The Derived Data Layer. The User Interface.

Data and Database Administration- Learning Objectives. Introduction. The Roles of Data and Database Administrators. The Open-source Movement. Modeling Enterprise Data. Managing Data Security. Databases Backup and Recovery. Controlling Concurrent Access. Managing Data Quality. Data Dictionaries and Repositories. Overview of Tuning the Database for Performance. Data Availability.

Distributed Databases- Learning Objectives. Introduction. Options for Distributing a Database. Distributed DBMS. Distributed DBMS Products.

Object-Oriented Data Modeling - brief coverage.

Object-Oriented Database Development – brief coverage.

ASSESSMENT

1. **Test #1:** *Test format would be multiple-choice. If other formats (true/false or essay type) are used, students would be informed accordingly. Test dates would be announced during the semester. Test must be taken on the Blackboard course portal. Check the menu item “Test” on Blackboard course portal for additional instructions. (Total Weight for Test #1: 18%)*

2. **Test #2:** *Test format would be multiple-choice. If other formats (true/false or essay type) are used, students would be informed accordingly. Test dates would be announced during the semester. Test must be taken on the Blackboard course portal. Check the menu item “Test” on Blackboard course portal for additional instructions. (Total Weight for Test #2: 20%)*

3. **Test #3:** Test format would be *multiple-choice*. If other formats (true/false or essay type) are used, students would be informed accordingly. Test dates would be announced during the semester. Test must be taken on the Blackboard course portal. Check the menu item “**Test**” on Blackboard course portal for additional instructions. (Total Weight for Test #3: 22%)
4. **Project (Program):** This project would be posted on Blackboard course portal. Check the menu item “**Project**” on Blackboard course portal for additional instructions. (Total Weight for Project: 15%)
5. **Research Paper:** Check the menu item “**Research Paper**” on Blackboard course portal for additional instructions. (Total Weight for Research Paper: 10%)
6. **Homework:** Homework assignments would be posted on Blackboard course portal. Check the menu item “**Homework**” on Blackboard course portal for additional instructions. (Total Weight for Homework: 15%)
- Total weight (18+20+22+15+10+15): 100%**

REQUIRED RESOURCES FOR THIS COURSE

1. Course Textbook
2. Internet Access
3. Blackboard Course Access
4. Basic Training in Blackboard System

<http://www.blackboard.campbell.edu>

GRADING SCALE

Range	Letter Grade
90+ %	A
80+ %	B
70+ %	C
60+ %	D
<60 %	F

LATE POLICY

1. Late assignments would not be accepted under any circumstances.
2. Please make a note of due date for Project (program), Research Paper, and Homework: **4/23/2009**

CODE OF ETHICS, DISCIPLINE, AND ACADEMIC HONESTY

Campbell University is Christian but not sectarian. Each year, many religious denominations and faiths are represented on the campus. However, it is expected that all those who attend the University will be sympathetic to its stated purposes. As a Baptist university, Campbell is committed to teaching students to think with Christian values as their basic guidelines. Accordingly, it is incumbent upon the University to provide its students with a code of honorable behavior that in its observance makes more nearly possible an environment whereby the student can grow spiritually, morally, and intellectually. To perpetuate these Christian ideals and principles, it is the responsibility of each student to maintain a high standard of personal behavior. Thus, a student who matriculates at Campbell University should demonstrate a willingness to abide by the following code while a member of the student body. The code of Campbell University arises

directly out of the institution's statement of purpose. The student, by virtue of his enrollment, agrees to abide by the rules and moral precepts which govern the University community.

- To uphold at all times and in all places, both on- and off-campus, the University's statement of purpose.
- To adhere to all college policies and regulations, including the rules governing the use of facilities, housing on and off the campus, and campus organizations.
- To maintain a standard of dress, which insures neatness, cleanliness, and appropriateness of attire.
- To exhibit good taste, decency, and restraint at all times, refraining from disorderly conduct and indecent, profane, or obscene expression.
- To be honest in all behavior, never cheating, plagiarizing, or knowingly giving false information.
- To exemplify principles of honor, integrity, and morality, and to help others fulfill their obligations under this code.

Violations of the Code of Honor involving academic dishonesty include, but are not limited to

Cheating - Cheating is wrongfully giving or receiving information or attempting to do so with regard to examinations, quizzes, classroom assignments, research papers, and other academic assignments.

Plagiarism - Plagiarism is defined as using the words or ideas of another source directly without proper acknowledgement of that source (i.e., footnotes, endnotes, parenthetical citation or any other form authorized by the professor making the assignment.) This includes the use of work from another student, the Internet, or any commercial services. Plagiarism also includes the unattributed use of any portion of a computer program or data file. In addition, submitting the same work for two or more classes without the expressed permission of all involved professors is prohibited.

Academic dishonesty is unacceptable and is subject to disciplinary response. Students involved in any form of cheating or plagiarism will receive a course grade of '**FX**'. Furthermore, they will be reported to the academic administration for further disciplinary action. Please refer to Student Handbook for further details on academic misconduct. <http://www.campbell.edu/sl/studenthandbook.pdf>

DISCLAIMER

This syllabus is intended to provide a basic structure to this course. Adherence to this syllabus is subject to change at the discretion of the instructor.

ADDITIONAL INFORMATION

This course would be taught in the context of a liberal arts education seeking to free persons to live more abundantly and securely in an ever-changing social order. At the completion of this course students would be equipped with superior vocational skills, productive insights, and professional integrity. Ethical responsibility towards the use of computers and information systems would be emphasized to inspire a productive and faithful maturation as individuals and as citizens. Students are encouraged to use creativity, imagination, and rigor in the use of intellectual skills.

STUDENT NOTES/COMMENTS

Note: Please use the space below to make your notes/comments regarding this course and its requirements while the syllabus is being explained on the first day of the class.

“In addition to offending our moral sense, teaching the actual items on a test is counter-productive for the very practical reason that it makes valid inferences about student achievement almost impossible.”

[Revised: January 2009, File: ITS_syllabus_345_spring_2009.doc]