Course Preview

IST769 – Advanced Database Management

COURSE DESCRIPTION

This course examines, in depth, databases and database management systems. Topics covered will include: the fundamental nature for how data is stored on electro-magnetic devices; database management system architecture (dissecting the database instance both memory and process components); building complex database objects: abstract data types, functions, procedures, sequences, triggers and views; building database applications using forms and reports; building data warehouses; establishing and maintaining database security and tuning databases for optimum performance. Oracle 10g and the 10g Internet Developer Suite will be used as the implementation vehicles for providing hands-on experience for DBMS installation, database development, implementation and administration through assignments, lab exercises and course projects.

LEARNING OUTCOMES

The learning outcomes for the MS in Information Management applicable to this course are:

• TECHNICAL KNOWLEDGE – By completely this course, you will achieve deep technical knowledge and comprehension about database management systems. You will develop the ability to apply these technologies to solve information problems at the individual and organizational levels. After completing this course, you will be able to:

  1. Articulate how data is stored in both primary and secondary storage
  2. Explain database management system architecture
  3. Identify, describe, and categorize database objects
  4. Design and implement advanced queries using Structured Query Language

• MANAGEMENT OF SOLUTION DEVELOPMENT - By completely this course, you will achieve a deep level of knowledge and comprehension of the disciplines used in the development of information system solutions. You will develop the ability to apply these disciplines to the solution of organizational and business problems. After completing this course, you will be able to:

  1. Design, construct and maintain a database and various database objects using procedural language constructs, forms and reports to solve problems
  2. Design and implement a complete problem solution using current database technology (Oracle 10g Database and Internet Developers Suite)

• MANAGEMENT OF INFORMATION TECHNOLOGY - By completely this course, you will be able to integrate technical and solution development concepts with the principles of IT governance, strategic alignment, user behavior and financial analysis. You will be able to apply these concepts in the analysis of complex management case studies and problems. You will be able to analyze, compare, evaluate, and clearly articulate the relative value of IT alternatives. After completing this course, you will be able to:

  1. Administer a database by recommending and implementing procedures including database tuning, backup and recovery
  2. Propose, implement and maintain database security mechanisms
Prerequisites
IST659: Database Administration Concepts and Management

Recommended Textbook and Software
Morrison, M. & Morrison, J. Guide to Oracle 10g, Boston, Massachusetts, Thomson Course Technology, 2003, ISBN: 9781418854360 (includes 4 Oracle 11g Database & Companion CD and Oracle 11g DS CDs)

Optional Textbook


Required Resources
Oracle Technology Network:  http://otn.oracle.com

Complete list of Oracle 11g reference books: http://www.oracle.com/pls/db112/homepage

Grading Policy
Final grades will be based on the number of points earned throughout the semester according to the following table:

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<tr>
<th>Grade</th>
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<tbody>
<tr>
<td>A</td>
<td>1000</td>
<td>B-</td>
<td>829</td>
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<tr>
<td>A-</td>
<td>949</td>
<td>C+</td>
<td>789</td>
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<tr>
<td>B+</td>
<td>909</td>
<td>C</td>
<td>749</td>
</tr>
<tr>
<td>B</td>
<td>869</td>
<td>C-</td>
<td>709</td>
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To use the Oracle software, you must become a registered Oracle Technology Network user. Registration is free.

Class Participation (70 points)
- **Reading Assignments** - Reading assignments must be completed prior to class. This will facilitate discussion during class.
- **Class Discussion** - Group activities such as case studies, discussion questions, and real world problems will be assigned and presented during class. There are no provisions for make-up of missed class activities. Therefore, it is important that class not be missed.

Assignments
- **Labs (300 points)** – There will be fifteen (15) labs that will reinforce the concepts and principals covered in our classroom lectures, readings and discussions. All labs are due at the beginning of the following class.
• **Best Practice Papers (150 points)** – There will be two (2) assignments. These assignments will be a best practice papers each worth 75 points. This will be a 1500 word report regarding a database related best practice.

• **Quizzes (90 points)** - There will be three (3) quizzes that will cover related topical areas from the textbook, class discussions, labs and outside reading.

• **Exercise (30 points)** – There will be one (1) exercise where you will find a form design feature and post a “how to” on the blackboard.

**Final Project (360 points)**

• There will be a final project that will consist of a paper and working database. This project will be an individual assignment. You will select a business problem that requires a database solution. The project is assigned at the beginning of the semester in order to give you time to prepare professional-looking documents. There will be 2 installments due during the semester (60 points) that will become part of your final project.

**Assignment Policy**

• **Assignment Format** - The student is responsible for getting assignments to/from the instructor for missed classes. All assignments are to be prepared using appropriate word processing software. Double-spaced, 12 font is the only accepted format.

• **Late Assignments** - All assignments are due at the beginning of class on the date listed in the Week-by-Week Course Outline. Unless prior arrangements have been made for extenuating circumstances, late assignments will be assessed a 25% reduction in points penalty for each week they are late.

• **Holidays** – You are still responsible for course material and assignments for classes cancelled for holidays or inclement weather.