

Department of Computer Science
CSC 544/744 Course Syllabus

I. Course Number: CSC 544/744 (3 credit hours)

II. Course Title: Database Administration and Security

III. Course Description:

Prerequisite for CSC 544: CSC 310 with a minimum grade of “C”.

Prerequisite for CSC 744: CSC 730 or departmental approval.

This course covers database management system concepts, database system architecture, installation and setup, data management, performance monitoring and tuning, backup and recovery, database security models and management, database auditing.

IV. Instructor:

Shuangteng Zhang

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V. Required Text

1. *Oracle 10g Database administrator: implementation and administration*, Gavin Powell and Carol McCullough-Dieter, Course Technology, 2007.

2. *Database Security and Auditing: protecting data integrity and accessibility*, Hassan A. Afyouni, Course Technology, 2006.

VI. Learning Outcomes:

CSC 544 and 744 common learning outcomes:

In this course, students will demonstrate the ability to:

1. Define common terms of database management system
2. Describe database system architecture
3. Explain the activities, roles and responsibilities involved in database administration
4. Demonstrate the basic skills of database administration such as database system installation and setup, data management, user management, system performance monitoring and tuning, backup and recovering.
5. Explain the general concepts and policies related to database security
6. Demonstrate basic skills of implementing database security policies
7. Describe database auditing environment and auditing process
8. Demonstrate basic skills of database auditing

Additional learning outcomes for CSC 744:

In addition, graduate students will also demonstrate the ability to:

9. Design secure policies and mechanisms to build a secure database system;
10. Evaluate and analyze a secure database system.

VII. Course Outline:

A breakdown of major topics to be covered in class and the approximate number of class contact hours for each topic is given below:

1. Database System Architecture (1 hours)
2. Oracle database system installation (2 hours)
3. Database creation and setup (2 hours)
4. Oracle physical architecture and data dictionary view (2 hours)

5. Oracle storage concepts and settings (3 hours)
6. Basic of querying a database (2 hours)
7. Table management (4 hours)
8. Constrains, indexes, and other special objects (2 hours)
9. Data management (4 hours)
10. Performance monitoring and tuning (3 hours)
11. Security architecture (2 hours)
12. Security management (5 hours)
13. Database Application Security Models (2 hours)
14. Database Auditing (3 hours)
15. Backup and recovery (3 hours)

VIII. Course Requirements:

Assignments and projects
 Test 1, Test 2, Final Exam

Additional requirements for CSC 744:

A term project on computer security system design and an independent study paper to analyze computer security. The minimum length of the paper is twenty pages.

IX. Grading and Evaluation Policies:

Grade Components:

Assignments and projects	35%
Test 1	20%
Test 2	20%
Final	25%

Mid-term grade will be determined based on the first test (50%) and the assignments (50%) due prior to mid-term. Final grade will be given using the following scale:

Grading Scale for CSC 544: A (90-100), B (80-89), C (70-79), D (60-69), F (0-59)

Grading Scale for CSC 744: A (92-100), B (83-91), C (74-82), F (0-73)

Student Progress:

Students are required to check their midterm grade progress report with the instructor. Midterm grade is calculated based on the midterm exam score and the total assignment and quiz scores obtained in the first half of the semester.

X. Attendance Policy:

Attendance will be taken during lectures. Unexcused absences in excess of 10% of the scheduled lecture/lab meetings **will result in a one letter grade reduction for the course**. Unexcused absences in excess of 20% of the scheduled lecture/lab meetings **will result in a two letter grade reduction for the course**. Unexcused absences in excess of 30% of the scheduled lecture/lab meetings **will result in a three letter grade reduction for the course**. Students with unusual circumstances should advise the instructor of their situation immediately. Students will be held responsible for all announcements made in class.

XI. Important Dates:

See <http://www.registrar.eku.edu/schedule/EKUCompass.pdf> pages 14-19.

XII. Students with Disabilities:

If you are registered with the Office of Services for Individuals with Disabilities, please make an appointment with the course instructor to discuss any academic accommodations you need. If you need academic accommodations and are not registered with the Office of Services for Individuals with Disabilities, please contact the office on the third floor of the Student Services Building, by email at disabilities@eku.edu or by telephone at (859) 622-2933 V/TDD. Upon individual request, this syllabus can be made available in alternative forms.

XIII. Academic Integrity:

This course adheres to EKU's academic integrity policy. The policy is available at www.academicintegrity.eku.edu. Questions regarding the policy may be directed to the Office of Academic Integrity.