

## Course Introduction

This hands-on course is intended for auditors and security specialists who are aware their businesses use database systems, but do not understand the database platform and therefore the risks it may carry. You will learn how database is built and a concept of what the various categories of user do on the database and the risks they carry.

The hands-on labs will show you how to scan the system for vulnerabilities and how to harden the system.

## Course Objectives

- To learn the fundamental concepts behind database system
- To study key components within a database deployment
- To study the process of thorough database assessment, including tools and methodologies
- To learn techniques used by hackers to exploit database flaws and vulnerabilities
- To learn how to audit and harden database system

## Course Highlights

- Software and tools include audit checklists provided
- Free membership for ACIS Alumni
  - Access to the latest information related to the course subjects
  - A life-time class re-sit

## Learning Level

- Advanced

## Course Duration

- 3 Days (18 Hours)

## Prerequisites

- Knowledge about administering database management system
- Knowledge about information security
- Knowledge about SQL language

## Target Group

- Database Administrators
- Systems Administrators
- IT Security Officer

- Database Application Developers
- IT Auditors

## Course Outline

### Module 1 RDBMS Security Elements

- Authentication
- Authorization
- Confidentiality
- Integrity
- Audit
- Backup and Recovery
- Remote Database Features
  - Replication
  - Federated or Distributed Databases
  - Database Clustering
- External Elements
  - Operating System Security
  - Application-Tier
  - Network Encryption

### Module 2 Database Authentication

- Database user accounts
- Authentication Methods
  - Password Authentication
  - Certificate Authentication
- External Authentication
- Credential Storage

### Module 3 Database Authorization

- DBA Privilege
- Database Object Privileges
- Access Controls
  - DAC
  - RBAC
- Default Database User Privileges

## Module 4 Database Confidentiality

- Data Encryption
- DDL Encryption
- Transport Encryption

## Module 5 Database Integrity

- Data Types and Data Constraints
- Referential Integrity
- Transaction Log and Automatic Recovery Process
- Transaction Log Protection

## Module 6 RDBMS and Database Audit

- Auditing Configuration
- Auditing of privileged activities
  - RDBMS Administration Activities
  - Data Manipulate (Insert, Update, Delete) Activities
  - Sensitivity Access Activities

## Module 7 High Availability and Redundancy Deployments

- RAID
- Replication and Federation
- Database Clustering
- Backup and Recovery

## Module 8 OS Hardening

- Microsoft Windows Security Checklists
- Unix/Linux Security Checklists

## Module 9 Database Application Security

- Application Security Concept
- Application-Tier Threats

## Recommended Course tracks

- PEN : Professional Penetration Testing Techniques and Vulnerability Assessment
- HYW : Hacking and Auditing Web Application Security
- HDW : Hacking and Auditing Microsoft Windows Security Server Security

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