



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITCS 336 – Database Administration I
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITCS 323
NQL Level Allocated: 8
NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course gives students critical knowledge and expertise on administrating the industry's most advanced database (DB) management system. This includes: installing Database, controlling the databases, backup and recovery and administrating users' security.

OBJECTIVES:

1. To critically identify the tools for administrating a DB.
2. To deeply understand the different types of users, their roles and responsibilities.
3. To identify the types of failure that can occur in DB.
4. To deeply understand essential security-related aspect of DB and its users.

SEMESTER:
INSTRUCTOR:
OFFICE TEL:
EMAIL:

ACADEMIC YEAR:

INTENDED LEARNING OUTCOMES (ILOS)

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate critical understanding and knowledge of administrating Database.	Knowledge: Theoretical understanding [Level 8]
A2	Contemporary Trends, Problems and Research: N/A	
A3	Professional Responsibility: N/A	
B. Subject-Specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Demonstrate creativity in application of knowledge to install, configure and maintain Database as well as manage its users.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]
B2	Modeling and Design: N/A	
B3	Application of Methods and Tools: Apply specialized tools to create, manage, and maintain databases.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]
C. Thinking Skills		NQF Descriptor/ Level
C1	Analytic: Critically evaluate DBMS applications and tools and choose the most appropriate one as per user requirements.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic: N/A	
C3	Creative: N/A	
D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/ Level
D1	Communication: Demonstrate the ability to express and communicate ideas in formal oral and written form.	<u>Communication, ICT and Numeracy Skills [Level 8]</u>
D2	Teamwork and Leadership: N/A	
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas and effectively allocate time in a given assignment.	<u>Competence: Autonomy, Responsibility and Context [Level 8]</u>
D4	Ethical and Social Responsibility: N/A	

Course Structures (Outline)						
Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Introduction and syllabus distribution.	Lecture	
2	2	2	A1, B1, B3	Introduction to SQL / PL-SQL - SQL DML, DCL Commands	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
3	2	2	A1, B1, B3, C1	PL/SQL Program - Writing Control Structures - Working with Composite Data Types	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
4	2	2	A1, B1, B3, C1	PL/SQL Program - Using Explicit Cursors	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises Quiz - 1
5	2	2	A1, B1, B3, C1	PL/SQL Program - Creating Stored Procedures and Functions	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
6	2	2	A1, B3	Oracle Environment -Exploring the Oracle Database Architecture - Preparing the Database Environment -Creating an Oracle Database and Managing	Lecture/ Class Discussion / In-Lab Supervised Work	In-Lab Exercises Assignment 1
7	2	2	A1, B1, B3, C1	Oracle Environment -Configuring the Oracle Network Environment -Managing Database Storage Structures	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
8	2	2	A1, B1, B3, C1, D1, D3	Oracle Environment -Administering User Security -Managing Data and Concurrency	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
9	2	2	A1, B1, B3, C1, D1, D3	Oracle Environment - Managing Undo Data - Implementing Oracle Database Security	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises

10	2	2	A1, B1, B3, C1	Database Maintenance	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
11	2	2	A1, B1, B3, C1	Performance Management	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises/ Lab Test
12	2	2	A1, B1, B3, C1	Intelligent Infrastructure Enhancements	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises/ Quiz 2
13	2	2	A1, B1, B3, C1, D1, D3	Backup and Recovery Concepts	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises/ Assignment 2
14	2	2	B1, B3, C1	<ul style="list-style-type: none"> • Performing Database Backups • Performing Database Recovery 	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
15	2	2	A1, B1, B3, C1	<ul style="list-style-type: none"> • Moving Data • Working With Support 	Lecture/ Class Discussion/ In-Lab Supervised Work	In-Lab Exercises
16	2	-	A1, B1, C1	All Topics		Final Exam

TEACHING MATERIALS:

Textbook(s):	<p>1- Bob Bryla (2015), <i>Oracle Database 12c DBA Handbook (Oracle Press)</i>, McGraw-Hill Education, ISBN: 978-0071798785.</p> <p>2- Bob Bryla & Kevin Loney (2014), <i>Oracle Database 12c The Complete Reference (Oracle Press)</i>, McGraw-Hill Education, ISBN: 978-0071801751.</p>
Handout(s):	<p>1. Available on Moodle i.e. http://www.ahlia.edu.bh/moodle</p> <p>2. Oracle Learning Library available through: http://www.oracle.com/technetwork/tutorials/index.html</p>
Reference(s):	<p>1. Waston J., OCA Oracle Database 11g Administration I</p> <p>2. Thomas B., OCA: Oracle Database 11g Administrator Certified Associate Study Guide</p>

ASSESSMENTS:

Type of Assessment	Description	ILOs	Weighting
Assignments	The students will be given 2 research based assignments each worth 10 marks and their total will be considered at the end.	A1, B1, C1, D1, D3	20%
Quizzes	The purpose of the quiz is to assess the students' knowledge and understanding of the topics covered in the course like creating and managing Oracle database, configuring Oracle network environment, performing database backup and recovery, implementing database security. Students will be given two quizzes, each one is 30 minutes, and the best one will be considered.	A1, B1, C1	10%
Lab Test	The knowledge and practical skills of students will be evaluated throughout practical test that will be of 90 minutes. It will cover topics discussed in the first 10 weeks.	B1, B3, C1	30%
Final Exam	The final exam is comprehensive and will be of two hours duration. It will consist of multiple choice questions, fill in the blank, short-answer and few essay questions.	A1, B1, C1	40%
In-Lab Exercises	Each of the In-Lab exercises consists of a set of practical tasks to be carried by the students during lab time and that will help in evaluating hands-on capability of the students.	B1, B3, C1	Formative
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

Ahlia University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.ahlia.edu.bh/integrity for more information).