

Template of Course Specification

Faculty: CIT
Department: IT
Program: BIT

I. General information about the course :					
1. Course Title:	Database Administration				
2. Course Code and Number :	IT324				
3. Credit Hours: 3	Lecture	Seminar/Tutorial	Practical	Training	Total
	2		2		4
4. Study Level and Semester:	Level 3 or 4 / Semester 6 or 7				
5. Pre-requisites (if any):	CS221 - Database Systems Design				
6. Co-requisites (if any) :	None				
7. Program in which the course is offered	BIT				
8. Teaching Language:	English				
9. Study System :	Semester Based				
10. Prepared by :	Course Facilitator (Mohammed Shamshuddin)				
11. Approval date :					
12. Approved by:	Department				

II. Course Description:
<p>This course will cover real time database administration tasks using Oracle 11g. This course provides students with sound knowledge in the following: installation, configure and support databases, managing storage, setting up user accounts, assigning permissions, securing databases, backing up and restoring databases, tuning the performance of database and performing other administrative tasks. This course will cover theory (concepts) and practical (lab sessions). The pre-requisite for this course is Database Systems Design.</p>
III. Course Aims
<p>This Course aims to:</p> <ol style="list-style-type: none"> 1. Make students understand the concept & architecture of modern database and the key role of a database administrator 2. Provide skills to plan and manage for a commercial database software 3. Train students to apply backup and recovery tasks 4. Train students to automate administrative tasks, monitor and optimize performance 5. Provide students with troubleshooting skills 6. Set the foundation for advanced administrator training and certification

VI. Course Intended Learning Outcomes (CILOs) :	
Knowledge and Understanding:	
Alignment of CILOs (Course Intended Learning Outcomes) to PILOs (Program Intended Learning Outcomes)	
Knowledge and Understanding PILOs	Knowledge and Understanding CILOs
After completing this program, students would be able to:	After completing this course, students would be able to:
A1. Show knowledge and understanding in computing and mathematics appropriate to the IT discipline	a1. Know the available databases, responsibilities and key role played by a DBA
A2. Understand the professional, ethical, and social responsibilities	a2. Understand Oracle architecture and all components of Oracle database server, Startup & Shutdown process & Database Tuning & different backup-recovery methods
A3. Recognize the need for and an ability to engage in continuing professional development	

Intellectual Skills :	
Alignment of CILOs (Course Intended Learning Outcomes) to PILOs (Program Intended Learning Outcomes)	
Intellectual Skills PILOs	Intellectual Skills CILOs
After completing this program, students would be able to:	After completing this course, students would be able to:
B1. Analyze a problem, and identify and define the computing requirements appropriate to its solution	b1. Analyze the different levels in startup and shutdown process
B2. Analyze the impact of computing on individuals, organizations, and society, including ethical, legal, security, and global policy issues	b2. Explore the purpose of tables-spaces and data-files, control files, redo log files
B3. Integrate IT-based solutions into the user environment	
B4. Identify and analyze user needs and take them into account in the selection, creation, and administration of computer-based systems	b3. Identify and manage profiles, user & quotas, system privileges and object privileges

Professional and Practical Skills	
Alignment of CILOs (Course Intended Learning Outcomes) to PILOs (Program Intended Learning Outcomes)	
Professional and Practical Skills PILOs	Professional and Practical Skills CILOs
After completing this program, students would be able to:	After completing this course, students would be able to:
C1. Use current techniques, skills, and tools necessary for computing practice	c1. Apply the optimized backup-recovery solution to fix the problem/crash
C2. Use and apply the current concepts and practices of the core information technologies	c2. Apply different database tuning methods to improve the performance of database
C3. Demonstrate the best practices and standards and their application	
C4. Develop, implement, and evaluate a computer-based system, process, component, or program to meet desired needs	c3. Applying all commands as a system administrator

Transferable (General) Skills :	
Alignment of CILOs (Course Intended Learning Outcomes) to PILOs (Program Intended Learning Outcomes)	
Transferable (General) Skills PILOs	Transferable (General) Skills CILOs
After completing this program, students would be able to:	After completing this course, students would be able to:
D1. Function effectively on teams to accomplish a common goal	d1. Write project - technical report and present projects/assignments
D2. Communicate effectively with a range of audiences	
D3. Assist in the creation of an effective project plan	

VI. Alignment of CILOs to Teaching and Assessment Strategies

First: Alignment of Knowledge and Understanding CILOs

Knowledge and Understanding CILOs	Teaching Strategies	Assessment Strategies
a1. Know the available databases	Lectures	Written Exam
a2. Understand Oracle architecture and all components of Oracle database server	Group Discussions	Observation
	Lab sessions	Report/Screen shots
	Brain Storming	Viva/Direct Questions
		Quiz

Second: Alignment of Intellectual Skills CILOs

Intellectual Skills CILOs	Teaching Strategies	Assessment Strategies
b1. Analyze the different levels in startup and shutdown process	Lectures	Written test Quizzes
b2. Explore the purpose of tablespaces and data-files, control files, redo log files	Lab sessions	Lab technical report
b3. Identify and manage profiles, user & quotas, system privileges and object privileges	Case study	Report
	Assignment	

Third: Alignment of Professional and Practical Skills CILOs		
Professional and Practical Skills CILOs	Teaching Strategies	Assessment Strategies
c1. Apply the optimized backup-recovery solution to fix the problem/crash	Lab sessions	Technical Report Worksheets
c2. Apply different database tuning methods to improve the performance of database	Homework	Report + Presentation
c3. Applying all commands as a system administrator	Group Discussions	Observations

Fourth: Alignment of Transferable (General) Skills CILOs		
Transferable (General) Skills CILOs	Teaching Strategies	Assessment Strategies
d1. Write project - technical report and present projects/assignments	Grouping Tips Notes Case Study	Presentation Observation Report

VII. Course topics and sub-topics (theoretical and practical) with contact hours and alignment to CILOs					
Topics/Units of Course Contents					
First: Theoretical Aspects					
No.	Course Topics/Units	Sub-topics	No. of Weeks	Contact Hours	CILOs
1	Introduction to DBA	Versions of oracle RDBMS Role of DBA	1	2	a1
2	Oracle Architecture	Components of Oracle Server Physical & Logical Structures Background processes	2	4	a2, a3
3	Oracle Instance	SGA Memory Structures PFile & SPFile	1	2	a2, a3
4	Startup & Shutdown process	Startup process Shutdown process Commands & options	1	2	b1
5	Managing Table spaces & Data files	Logical Containers Physical files Add/drop/modify TS Add/drop/modify DF	2	4	b2
6	MID TERM EXAM				
7	Managing Control files and Redo log files	Concept of CFs & RDFs Multiplex Control Files Remove CFs Add/Drop/Modify RDFs	2	4	b3
8	Managing Security	managing profiles users, roles, privileges, quotas etc.	2	4	c1, c2, c3
9	Backup Recovery	Logical Backups Data pump engine Export & Import utility	1	2	c1, c2, c3
10	Backup Recovery	Physical Backups Col & Hot backups RMAN backup Scenarios	1	2	c1, c2, c3
11	Performance Tuning OEM & Upgrading	Memory Tuning Table partitions Upgrading server software	1	2	c2, c3
12	FINAL EXAM				

Total number of weeks and hours	14	28
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I. Teaching Strategies
Lectures
Lab sessions
Group Discussions
Case study
Assignment
Homework
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Second: Practical/Tutorial/Clinical Aspects				
Write up practical/tutorial/clinical topics				
No.	Practical/Tutorial/Clinical topics	No. of Weeks	Contact Hours	CILOs
1	Installing Oracle Server Software	1	1	c2, c3
2	Creating Database; Startup-Shutdown commands	2	4	b1, c3
3	Table-spaces & data-files commands	2	4	b2, c3
4	Control file & Redo log file commands	2	4	b2, c3
5	Creating profiles, users, roles. Grant and revoke object, system privileges, quotas	2	4	b3, c3
6	Physical backups & Logical backup commands	2	4	c1, c2, c3
7	OEM and Table partition commands	2	4	c2, c3
8	Performance & tuning commands	1	1	c2, c3
9	Assignment/Project/Presentation Reports submission	1	2	d1
Total number of weeks and hours		14	28	

II. Tasks and Assignments :				
No.	Task/Assignment	CILOs	Week due	Mark
1	Assignment 1	b1, b2, b3, d1	10	5%
2	Assignment 2	c1, c2, c3, d1	12	5%

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III. Learning Assessment:					
No.	Assessment Tasks	Week due	Mark	Proportion of Final Assessment	Aligned CILOs
1	Assignments + Reports	12	5+5+10	20%	c1, c2, c3, d1
2	Quiz 1 & Quiz 2	4 & 9	5	5%	a1, a2
3	Mid term exam	7	15	15%	b1, b2,b3
4	Practical Lab		10	10%	c1, c2, c3
5	Final Exam	15	50	50%	
Total			100		

IV. Learning Resources :	
(Author, (Year), Book Title, Edition, Publisher, Country of publishing)	
Textbooks-not more than 2	
<ol style="list-style-type: none"> Bob Bryla and Kevin Loney (Dec 6, 2007), Oracle Database 11g DBA Handbook, Edition, Oracle Press, USA. Saikat Basak, (2010), Oracle DBA Concise Handbook, 2nd Edition, Published by Ensel Software. 	
Essential References-not less than 4	
<ol style="list-style-type: none"> David C. Kreines, Brian Laskey, (1999), Oracle Database Administration: The Essential Reference, 2nd Edition , O'Reilly Media, USA Kevin Loney (Dec 17, 2008), Oracle Database 11g The Complete Reference, 3rd Edition, Oracle Press, USA Robert G. Freeman, (2010), Oracle Database 10g, 2nd Edition, McGraw Hill, USA John Watson, Roopesh Ramklass and Bob Bryla (Aug 17,2009), OCA/OCP Oracle Database 11g All-in-One Exam Guide, Oracle Press, USA 	
Electronic Materials and Web Sites	
<ol style="list-style-type: none"> www.oracle.com www.enselsoftware.com 	

V. Course Policies (To be determined by Faculty Deanship):

Based on university regulations, the following aspects should be figured out:

1.	(Class Attendance) :
2.	(Tardy) :
3.	(Exam Attendance/Punctuality) :
4.	(Assignments & Projects) :
5.	(Cheating) :
6.	(Plagiarism) :
7.	(Other policies) :

Template of Course Syllabus

Faculty : TIC

Department: IT

Program : BIT

I. General information about the course instructor :							
Name	Mohammed Shamshuddin	Office Hours (3 Hours Weekly)					
Location & phone number	USTY, 711948166	Sat	Sun	Mon	Tue	Wed	Thu
Email	shams51@yahoo.com		2				1

II. General information about the course:						
1.	Course Title :	Database Administration				
2.	Course Code and Number :	IT324				
3.	Credit Hours :	Credit Hours				Total
		Theoretical	Seminar/Tutorial	Practical	Training	
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5.	Pre-requisites (if any):	CS221 - Database Systems Design				
6.	Co-requisites (if any):	None				
7.	Program in which the course is offered:	BIT				
8.	Teaching Language:	English				
9.	Instruction location:	N/A				

عميد الكلية
د. عبدالقادر العبادي

رئيس القسم
أ. نبيل المخلافي

مسؤول البرنامج
أ. وديع القباطي

المراجع

الموصف

I. Course Description

This course will cover real time database administration tasks using Oracle 11g. This course provides students with sound knowledge in the following: installation, configure and support databases, managing storage, setting up user accounts, assigning permissions, securing databases, backing up and restoring databases, tuning the performance of database and performing other administrative tasks. This course will cover theory (concepts) and practical (lab sessions). The pre-requisite for this course is Database Systems Design.

II. Course Aims:

This course aims to:

1. Make students understand the concept & architecture of modern database and the key role of a database administrator
2. Provide skills to plan and manage for a commercial database software
3. Train students to apply backup and recovery tasks
4. Train students to automate administrative tasks, monitor and optimize performance
5. Provide students with troubleshooting skills
6. Set the foundation for advanced administrator training and certification

III. Course Intended Learning Outcomes (CILOs) :

1. a1. Know the available databases, responsibilities and key role played by a DBA
2. a2. Understand Oracle architecture and all components of Oracle database server, Startup & Shutdown process & Database Tuning & different backup-recovery methods
3. b1. Analyze the different levels in startup and shutdown process
4. b2. Explore the purpose of tables-paces and data-files, control files, redo log files
5. b3. Identify and manage profiles, user & quotas, system privileges and object privileges
6. c1. Apply the optimized backup-recovery solution to fix the problem/crash
7. c2. Apply different database tuning methods to improve the performance of database
8. c3. Applying all commands as a system administrator
9. d1. Write project - technical report and present projects/assignments

IV. Course Contents				
Theoretical Aspect:				
No.	Course Units	Sub-topics	Week due	Contact Hours
1.	Unit-1	Introduction to DBA, Oracle Architecture, Oracle Instance, Startup & Shutdown process	Week 5	10
2.	Unit-2	Managing Table spaces & Data files, Managing Control files and Redo log files,	Week 9	8
3.	Unit-3	Managing Security	Week 11	4
4.	Unit-4	Backup Recovery	Week 13	4
5.	Unit-5	Performance Tuning OEM & Upgrading	Week 14	2
Total number of weeks and hours			14	28

Second: Practical/Tutorial/Clinical Aspects :			
Write up practical/tutorial/clinical topics			
No.	Practical/Tutorial/Clinical topics	No. of Weeks	Contact Hours
1.	Installing Oracle Server Software	1	1
2.	Creating Database; Startup-Shutdown commands	2	4
3.	Table-spaces & data-files commands	2	4
4.	Control file & Redo log file commands	2	4
5.	Creating profiles, users, roles. Grant and revoke object, system privileges, quotas	2	4
6.	Physical backups & Logical backup commands	2	4
7.	OEM and Table partition commands	2	4
8.	Performance & tuning commands	1	1
9.	Assignment/Project/Presentation Reports submission	1	2
Total number of weeks and hours		14	28

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V. Teaching Strategies

1. Lectures
2. Lab sessions
3. Group Discussions
4. Case study
5. Assignment
6. Homework
7. Brain Storming

VI. Tasks and Assignments

No.	Task/Assignment	Week due	Mark
.١	Assignment 1	WEEK 12	7.5
.٢	Assignment 2	WEEK 12	7.5

VII. Learning Assessment:

No.	Assessment Tasks	Assessment day & date	Mark	Weight
1	Quiz 1	WEEK 3	5	5%
2	Quiz 2	WEEK 5		
3	Mid term exam	WEEK 7	15	15%
4	Practical Lab	WEEK 10	10	10%
6	Assignments	WEEK 12	15	20%
7	Reports	WEEK 12	5	
8	Final Exam	WEEK 15	50	50%
	Total			

VIII. Learning Resources

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1. Bob Bryla and Kevin Loney (Dec 6, 2007), Oracle Database 11g DBA Handbook, Edition, Oracle Press, USA.
2. Saikat Basak, (2010), Oracle DBA Concise Handbook, 2nd Edition, Published by Ensel Software.

SECNEREFER

1. David C. Kreines, Brian Laskey, (1999), Oracle Database Administration: The Essential Reference, 2nd Edition , O'Reilly Media, USA
2. Kevin Loney (Dec 17, 2008), Oracle Database 11g The Complete Reference, 3rd Edition, Oracle Press, USA
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Electronic Materials and Web Sites:

1. www.oracle.com
2. www.enselsoftware.com

IX. Course Policies (To be determined by Faculty Deanship)

1.	Class Attendance :
2.	Tardy :
3.	Exam Attendance/Punctuality:
4.	Assignments & Projects:
5.	Cheating:
6.	Plagiarism:
7.	Other policies: