Course Definition File

Database system Lab (1)

Information

Technology

Engineering

1. Basic Information:

Course Name	Database System Lab 1
Course Code	BDBL501
Number of Presentational Sessions*	8*2
Number of Synchronous Sessions**	8
Number of Shorter Tests***	2
Number of Exams***	1
Theoretical Sessions Work Load (hrs.)	48
Practical Sessions Work Load (hrs.)	24
Credit Hours	4

*Each presentational session comprises both recorded lecture (1.5 hrs.) and interactive learning content (1.5 hrs.).

**Each synchronous session comprises the interactive lecture carried out in real time in a virtual class (1.5 hrs.).

***Each shorter test is 0.5 hr. long. The final exam is 2 hrs. long.

N.B.

Generally, each chapter requires two presentational sessions: one for the recorded content and one for the interactive content (unless the chapter is too long, in which case it may require more sessions). This note applies to synchronous sessions as well, where each chapter requires one synchronous session generally.

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2. Prerequisites courses:

Course	Code
In Parallel with Database systems (1)	BDB501

3. Course Objectives:

"Database System Lab 1" aims to train the student on database systems especially Oracle 12C starting from analysis then setup and installing the database then creating database objects like tables, indexes, views, triggers…etc. The course will be a practice for all issues that student study in course database system 1.

Students will be able to:

1. Analyze system information to create a relational database respecting normalization by realistic examples and use software database tools to achieve that.

2. Figure out common database systems and identify advantages.

3. Work with Oracle database system 12C and practice knowledge of database system by creating and testing database objects like tables and views with samples, examples and projects.

4. Learning Outcomes (LO):

By the end of this course, the learner is expected to:

- Analyze a real case for a system information and design a Database for such a system with an ERD

- Master Oracle 12C and Data Base development

- Proficiency of SQL Plus with some common built-in functions

- Write code in PL/SQL language supported by Oracle

- Practice database system knowledge in Oracle

- Work with a team in a system information project that will be developed later in oracle database system

5. Assessment Results:

Chapter Number	Chapter Title	General Objectives	Assessment Type				
			Interactive Content & Recorded Sessions	Applied Activities (Synch. Sessions)	Final Exam*/ Shorter Tests**	Presentations and Interviews***	Reports ***
CH1	System information and common database management system	Comprehension – Analytical Thinking – Tools And Application Hands – On	√	√	√	√	√
CH2	Oracle 12C	Comprehension – Analytical Thinking – Tools And Application Hands – On	√	√	√	√	√
CH3	SQL Language	Comprehension – Analytical Thinking – Tools And Application Hands – On	√	√	√	√	√
CH4	Tables, indexes, constraints and defaults	Comprehension – Analytical Thinking – Tools And Application Hands – On	√	√	√	√	√
CH5	PL/SQL language	Comprehension – Analytical Thinking – Tools And	√	√	√	√	√

		Application Hands – On					
CH6	Triggers Functions and Procedures	Comprehension – Analytical Thinking – Tools And Application Hands – On	√	√	√	√	√
CH7	Transactions	Comprehension – Analytical Thinking – Tools And Application Hands – On	√	√	√	√	√
CH8	End–user Application	Comprehension – Analytical Thinking – Tools And Application Hands – On	√	√	√	√	√

*The final exam is two hours long and is given at the end of the course.

**Shorter tests are about 30 minutes long and are given after three or four lectures throughout the semester during synchronous sessions.

***Presentations, interviews, and reports are submitted once after each three or four lectures throughout the semester during synchronous sessions.

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6. Course Syllabus:

Chapter	Subject	Content	Number of Learning Objects	Number of synchronous Learning Objects
CH1	System information and common database management system	1. Information Systems 2. Database management system	2	1
CH2	Oracle 12C	1. Master Oracle 2. Database tests 3. Folders structure 4. Database auxiliaries	4	2
CH3	SQL Language	1. Teaching account SCOTT 2. Create, Alter, Drop Instructions 3. Transfer Functions to Substitute Types 4. Date Type Functions 5. Frequently used Functions 6. Tables Linking 7. Views 8. Examples	8	4
CH4	Tables, indexes,	1. Indexes	3	1

	constraints and defaults	2. Constraints 3. Default values		
CH5	PL/SQL language	1. Basic Language Structure 2. Data Types 3. Condition and Loops 4. SQL Language within PLSQL 5. Cursors 6. Exceptions 7. Nested Block 8. Developer defined Errors	8	4
CH6	Triggers Functions and Procedures	1. Procedures 2. Functions 3. Exercises on ORACLE Functions and Procedures 4. Triggers 5. Packages	5	2
CH7	Transactions	1. Transactions Definition 2. Exercise 1 3. Data Reliability Assurance 4. Exercise 2 5. Isolation level 6. Locks	6	3
CH8	End–user Application	1. Connection to ORACLE Database 2. ORACLE Office Applications 3. ORACLE Web Applications 4. Application express or APEX	4	2

7. Practical Activity:

- **Tools and Labs:**

Tool Name	Description
Oracle 12C	Database management system
Power designer	Analytical tools to create databases
Text Editor	Texts Editing Program
Database management systems	MS SQL server, My SQL, Access
Visual studio	Software development tools

- **Practical Activities per Chapters:**

Chapter	Activities Type	Remarks
CH1	☑ Exercises ☑ Homework	1st Assignment
CH2	☑ Exercises ☑ Homework	
CH3	☑ Exercises ☑ Homework	
CH4	☑ Exercises ☑ Homework	
CH5	☑ Exercises ☑ Homework ☑ Projects	2nd Assignment Training project
CH6	☑ Exercises ☑ Homework ☑ Projects	
CH7	☑ Exercises ☑ Homework ☑ Projects	
CH8	☑ Exercises ☑ Homework ☑ Projects	

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8. References：

https://www.tutorialspoint.com/dbms/dbms_data_models.htm

http://www.oracletutorial.com