INSTITUTE	**DIPLOMA STUDIES**
PROGRAM	**DIPLOMA ENGINEERING (COMPUTER ENGINEERING)**
SEMESTER	**5**
COURSE TITLE	**ADVANCE DATABASE MANAGEMENT SYSTEM**
COURSE CODE	**09CE1502**
COURSE CREDITS	**3**

Objective:

1 This subject is related with the composition of database for business and engineering application. After the finish of this course the students will most likely compose
simple and advanced PL/SQL code blocks, use advanced features such as ref cursors and bulk
fetches and database designing with normalization. Thus students will be able to design database for their projects in upcoming semester.

2 This subject is related with the composition of database for business and engineering application. After the finish of this course the students will most likely compose simple and advanced PL/SQL code blocks, use advanced features such as ref cursors and bulk fetches and database designing with normalization. Thus students will be able to design database for their projects in upcoming semester.

Course Outcomes: After completion of this course, student will be able to:

1 Apply different Normalization methods

2 Execute different advance SQL queries link with Transaction Processing and Locking using approach of Concurrency control

3 Perform PL/SQL programming utilizing idea of Database Object, Cursor Management, Package and Triggers

4 Determine usage of Privileges, Indexes

5 Apply Functional Dependency and Decomposition for database design

Pre-requisite of course: Database Management system

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	2	50	30	20	25	25

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Contents : Unit	Topics	Contact Hours
1	**Functional Dependency and Decomposition** Introduction to functional dependency, key terms for functional dependency, rules of functional dependency, types of functional dependency: Multivalued dependency, trivial functional dependency,, nontrivial functional dependency, transitive dependency, Decomposition, types of decomposition: Lossy decomposition, Lossless decomposition, Dependency-Preserving decomposition	8
2	**Normalization** Introduction to normalization, Normal Form: First Normal Form (1NF), Second Normal Form(2NF),, Third Normal Form(3NF), Boyce Codd Normal Form(BCNF)	4
3	**Transaction and Concurrency** Transaction concept, ACID property, basics of Concurrency, method of Concurrency control: Locking method, Timestamp method, Optimistic method	5
4	**Advanced SQL** Index: types of Index, creation of Index, View: Creating view, update view, Sequence: Creating sequence, Altering sequence, Dropping sequence, Privileges: Grant and Revoke	5
5	**PL/SQL** Advantages of PL/SQL, datatypes, variables, control structure: condition control, iterative control, sequential control, PL/SQL Transactions: Commit, Rollback, Savepoint,, Cursor: basics of cursor, type of cursor, PL/SQL Security: Locks, types of locks, levels of lock, PL/SQL Database Objects: Procedures and Functions, Package: Components of Package, need of Package, Package Specification, Introduction to database Trigger, usage, types of Trigger	6
Total Hours		**28**

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Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Practical List** Practice on Normalization – utilizing following table perform different types of normalization form., Perform transaction process on databases., Practice on functional dependencies., Perform queries for Grant and Revoke privileges., Perform queries for creating, altering sequence., Perform queries for creating index., Perform queries for views, Perform PL/SQL programme to check whether given number is prime or not., Perform PL/SQL programme to swap two numbers., Perform PL/SQL programmes on procedures and functions., Perform PL/SQL programmes using cursors., Create triggers for insertion and updation., Create a trigger that does not allow insert, update and delete operation on table., Perform and implement the programmes on database packages., Implement concurrency control using lock operation.	28
Total Hours		**28**

Textbook :

1 "SQL, PL/SQL", Ivan Bayross, BPB Publication, 4

References:

1 Ivan Bayross, "SQL, PL/SQL", BPB Publication, fourth edition

2 P. S. Deshpande, "SQL & PL/SQL for Oracle 10g", dreamtech press

3 C. J. Date, "An Introduction to Database System" , Pearson Education, eighth edition

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
35.00	35.00	30.00	0.00	0.00	0.00

Instructional Method:

1 The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, also need to use ICT tools and facilities.

2 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.

3 Practical examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

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Supplementary Resources:

1 https://onlinecourses.nptel.ac.in/noc18_cs15/preview

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