**Vivekanand Education Society’s Institute of Technology**

**Department of MCA**

**Academic Year: 2018-2019**

# Name of the Course: Database Management systems Lab Lab/Week: 04 hrs

# Branch: MCAIII Regular Shift I and Regular Shift II

# Faculty In charge: Sangeeta Oswal, Meenakshi Garg

# Email: sangeeta.oswal@ves.ac.in,meenakshi.garg@ves.ac.in

1. **Grading /Marking System**
2. ****
3. **References:**
4. Joel Murach, “Murach’s oracle PL /SQL” Joel Murach’s publication Murachs and

Assocites

1. Sharnam shah, Vaishali Shah, “Oracle for Professionals”Publication SPD-Shroff

Publishers and Distributors 2011

1. RiniChakrabarti, ShilbhadraDasgupta, KLSI, “Advanced Data Base Management System

Publication DreamTech

1. Chakravarti ,“Advance Data Base Management System”, Wiley -Dreamtech
2. RajshekharSundaram, “Oracle 10g Programming: A Premier”, Publication Pearson

Education 2009

1. eter Rob and Coronel, “Database Principals fundamentals of Design, Implementation and Management”, Publication Cengage Learning 2011.

**Course Objective:**

1. **CEOL301.1** Make the students understand basic and relatively advanced issues in modern

database management, information storage and retrieval.

1. **CEOL301.2** Study various database techniques in developing data-intensive applications.
2. **CEOL301.3** Explore the need of software testing in current industry scenario, understanding

and knowledge of foundations, techniques and tools in area of software.

1. **CEOL301.4** Understand the essential characteristics requirements and usage of Automation

tools.

**Course Outcomes:**

1. **MCAL301.1** Design database systems using available tools.
2. **MCAL301.2** Develop applications using basic and modern database techniques as per

organization requirements.

1. **MCAL301.3** Demonstrate software testing tools
2. **MCAL301.4** Create test design documents and test reports

**Programme Educational Objectives:**

1. To provide students with a solid foundation in the core engineering concepts like mathematics, programming, data management, networking etc. This will further enable students to analyse, design and create solutions for any enterprise, national or global in multidisciplinary fields.
2. To inculcate in students a strong ethical and professional attitude which along with effective communication, managerial and teamwork skills will enable success in a broad social context.
3. To prepare the students to excel in academic environment and make them ready for productive employment through global education and to empower them to develop high end business and innovative skill.
4. To provide broad educational and research experience through interdisciplinary and industrial collaboration program.

**Programme Outcomes:**

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| --- | --- |
| **PO** | **Description** |
| PO1 | **Computational Knowledge:** Apply knowledge of computing fundamentals, computing specialisation, mathematics, and domain knowledge appropriate for the computing specialisation to the abstraction and conceptualisation of computing models from defined problems and requirements. |
| PO2 | **Problem Analysis:**  Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines. |
| PO3 | **Design /Development of Solutions:**  Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. |
| PO4 | **Conduct investigations of complex Computing problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions |
| PO5 | **Modern Tool Usage:** Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations |
| PO6 | **Professional Ethics:** Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices |
| PO7 | **Life-long Learning:** Recognise the need, and have the ability, to engage in independent learning for continual development as a computing professional |
| PO8 | **Project management and finance:** Demonstrate knowledge and understanding of the computing and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.  . |
| PO9 | **Communication Efficacy:** Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions |
| PO10 | **Societal and Environmental Concern:** Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices |
| PO11 | **Individual and Team Work:** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments |
| PO12 | **Innovation and Entrepreneurship:** Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large |

**Lab Plan**:

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| --- | --- | --- | --- | --- |
| **SL No.** | **Module** | **Topics of Coverage** | **CO Mapped** | **References** |
| 1 | **DDL and DML and Constraints** | **Data Definition Language:** Create, Alter, Drop, Rename,Truncate  **Data Manipulation Language:** Insert, Update, Delete, Select  **Constraints**:Not Null, Unique Key, Primary Key, Foreign Key, Check, adding and Dropping a Constraint | **MCAL301.1** | 1,2,4 |
| 2 | **Data Control**  **Language and**  **Transaction**  **Control** | Grant, Revoke, Roles  Commit, Rollback | **MCAL301.1** | 1, 3 |
| 3 | **SQL SELECT**  **Statements** | Column Alias, Concatenation Operator, Arithmetic Operators,  ComparisonConditions, Logical Conditions, ORDER BY Clause | **MCAL301.2** | 1,3 |
| 4 | **Functions**  **And**  **Subquery** | Single Row Functions, Character Functions, Number Functions,  Date Functions, Conversion Functions, Aggregate functions  **Subquery:** Types of Subquery, Group by and Having Clause | **MCAL301.2** | 1,3 |
| 5 | **Joins and**  **other concepts** | Equijoins, Non-Equijoins, Self Joins, Left Outer  Joins, Right Outer Joins, Full Outer Joins, Natural Joins  **Other Concepts:** View, Index | **MCAL301.2** | 1,3 |
| 6 | **PL/SQL**  **Practical** | **Programming:** Variables, Identifiers, Comment, PL/SQL Block Structure  **IF Statements:** Simple IF Statements, Compound IF Statements IF-THEN-ELSE Statements  **Loop:** Basic Loop, WHILE Loop, FOR Loop | **MCAL301.2** | 4,5 |
| 7 | **Cursor and**  **Trigger** | **Cursor:** Types of Cursor, Explicit Cursor Attributes  **Trigger:** Trigger, Statement Trigger, Row Trigger, Using Conditional Operations. | **MCAL301.2** | 4,5 |
| 8 | **Functions,**  **Procedures**  **and packages** | Create Function, Function with Arguments, Executing Function, Dropping Function  **Procedures:** Block Structure of Subprogram, Types of Subprograms, Procedurewith Parameters, Executing Procedures, Dropping Procedures  **Packages:** Package Specification, Package Body, Creating Package, Execution,Dropping Package | **MCAL301.2** | 4,5 |
| 9 | **Parallel and**  **distributed**  **database** | **Implementation of different types of Partitions**: Range, Hash, List.  **Distributed Database:** Horizontal, Vertical fragmentation | **MCAL301.2** | 4,5 |
| 10 | **Object**  **Oriented**  **database** | Implementation ofAbstract Data Type, Inheritance, Reference | **MCAL301.2** | 4,5 |

**Course Outcome and Programme Outcome Mappings:**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO5** | **PO7** | **PO8** | **PO12** | **PSO1** | **PSO2** |
| **MCAL301.1** | √ | √ | √ | -- | √ | √ | √ | √ | -- |
| **MCAL301.2** | -- | -- | √ | √ | √ | √ | √ | √ | √ |

**Assignment Marking Scheme**

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| **Sr. No** | **Marks** | **Remarks** |
| 01 | 10 | On date of DOS & Good Presentation |
| 02 | 08 | After one week of DOS & Good Presentation |
| 03 | 06 | After two week of DOS |
| 04 | 00 | Late submission |

**(Faculty Signature)**