1. **Course Details**

| **Credit Hours** | 4 (3+1) |
| --- | --- |
| **Pre-requisites** | - |
| **Course Leader** | Dr. Nargis Fatima |
| **Recommended Textbook(s)** | 1. Modern Database Management, Jeffrey A. Hoffer, University of Dayton Ramesh Venkataraman, 12th Edition, Pearson, 2016. 2. Database systems: A practical approach to design, implementation, and management, Thomas Connolly and Carolyn Begg, 6th Edition, Pearson, 2015. |
| **Recommended Reference (Books/Websites/Articles)** | 1. Database system concepts, Avi Silberschatz, Henry F. Korth and S. Sudarshan, 6th Edition, McGraw-Hill, 2010. 2. Database systems: Design, implementation and management, Carlos M. Coronel, 13th Edition, Cengage Learning, 2018. |

1. **Lab Learning Outcomes (CLO)**

| **CLOs** | **Description** | **Domain** | **Taxonomy Level** | **PLOs** | **Assessment Artifact** |
| --- | --- | --- | --- | --- | --- |
| **CLO1** | **Demonstrate** knowledge about the practical aspects of database systems | Cognitive | 2 | 2 | Participation, Discussion, Viva |
| **CLO2** | **Manipulate** tools and techniques to solve problems by applying database concepts. | Psychomotor | 3 | 5 | Report writing, Lab task, Midterm, Final term assessment |
| **CLO3** | **Report** the outcome of an experiment/task in standard format | Affective | 2 | 7 | Report writing, Midterm, Final term assessment |

1. **Lab Assessment**

| **Evaluation Methods** | **Weight (%)** |
| --- | --- |
| Lab Report | 14 |
| Midterm Assessment | 4 |
| Final Term Assessment (Final Project) | 7 |
| **Total** | **25** |

1. **Weekly Breakdown (All CLOs shall be assessed in every lab)**

| **Week No.** | **Topics** |
| --- | --- |
| 1 | Introduction to oracle and installation guidelines |
| 2 | Retrieving data using the SQL SELECT statement |
| 3 | Restricting using where and sorting data using order by |
| 4 | Using single-row character functions to customize output, use of NVL function |
| 5 | Using single-row date functions to customize output & type conversion |
| 6 | Constructing ERD using VISIO or Erwin |
| 7 | Displaying data from multiple tables |
| 8 | Midterm assessment |
| 9 | Use of inner & outer joins for displaying data from multiple tables |
| 10 | Aggregating data using group functions |
| 11 | Use of subqueries |
| 12 | Using the set operators |
| 13 | Manipulating data |
| 14 | Using DDL statements to create and manage tables |
| 15 | Views, sequences, indexes |
| 16 | Final term assessment |