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VISWAJYOTHI COLLEGE OF ENGINEERING AND TECHNOLOGY, VAZHAKULAM P.O, MUVATTUPUZHA, ERNAKULAM - **686670**

**KERALA, INDIA** **- 686670**

**COURSE INFORMATION SHEET**

|  |  |
| --- | --- |
| PROGRAMME: Computer Science and Engineering | DEGREE: B TECH |
| COURSE: Application Software Development Lab | SEMESTER: 5 CREDITS: 2 |
| COURSE CODE: CS333/C309 | COURSE TYPE: CORE /ELECTIVE / BREADTH/ S&H : CORE |
| COURSE AREA/STREAM :Theoretical Computer Science and Programming | CONTACT HOURS: 3+1 (Tutorial) hours/Week. |
| CORRESPONDING LAB COURSE CODE (IF ANY): | LAB COURSE NAME : |
| COURSE COORDINATOR NAME Rini Simon |  |

**SYLLABUS:**

|  |  |  |
| --- | --- | --- |
| MODULE | DETAILS | HOURS |
|  | **List of Exercises/Experiments: (Exercises/experiments marked with \* are mandatory from each part. Total 12 Exercises/experiments are mandatory)**   1. Creation of a database using DDL commands and writes DQL queries to retrieve information from the database. 2. Performing DML commands like Insertion, Deletion, Modifying, Altering, and Updating records based on conditions. 3. Creating relationship between the databases. \* 4. Creating a database to set various constraints. \* 5. Practice of SQL TCL commands like Rollback, Commit, Savepoint. 6. Practice of SQL DCL commands for granting and revoking user privileges. 7. Creation of Views and Assertions \* 8. Implementation of Build in functions in RDBMS \* 9. Implementation of various aggregate functions in SQL \* 10. Implementation of Order By, Group By& Having clause. \* 11. Implementation of set operators, nested queries and Join queries \* 12. Implementation of various control structures using PL/SQL \* 13. Creation of Procedures and Functions \* 14. Creation of Packages \* 15. Creation of database Triggers and Cursors \* 16. Practice various front-end tools and report generation. 17. Creating Forms and Menus 18. Mini project (Application Development using Oracle/ MySQL using Database connectivity)\*   a. Inventory Control System.  b. Material Requirement Processing.  c. Hospital Management System.  d. Railway Reservation System.  e. Personal Information System.  f. Web Based User Identification System.  g. Timetable Management System.  h. Hotel Management System. |  |
| TOTAL HOURS | | **39** |

**TEXT/REFERENCE BOOKS:**

|  |  |
| --- | --- |
| **T/R** | **BOOK TITLE/AUTHORS/PUBLICATION** |
| 1 | Database Systems: Models,Languages,Design and Application Programming, 6/e , Ramez Elmasri and Shamkant B. Navathe, Pearson Education. |
| 2 | SQL,PL/SQL”Ivan Bayross”, BPB Publication 3rd Ed. |

**COURSE PRE-REQUISITES:**

|  |  |  |  |
| --- | --- | --- | --- |
| **C.CODE** | **COURSE NAME** | **DESCRIPTION** | **SEM** |
| CS208 | Principles of Database Design |  | IV |

**COURSE OBJECTIVES:**

|  |  |
| --- | --- |
| 1 | To introduce basic commands and operations on database. |
| 2 | To introduce stored programming concepts (PL-SQL)using Cursors and Triggers . |
| 3 | To familiarize front end tools of database. |

**COURSE OUTCOMES:**

|  |  |
| --- | --- |
| **SNO** | **DESCRIPTION** |
| C309.1 | Illustrate the DDL and DML Commands in SQL. |
| C309.2 | Evaluate the basic concepts in PL/SQL |
| C309.3 | Apply stored programming concepts using cursors and triggers |
| C309.4 | Use GUI, Event Handling and Database connectivity to develop and deploy  applications and applets. |
| C309.5 | Develop medium sized project in a team |

**CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME OUTCOMES**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| C309.1 | 3 | 1 | - | - | 2 | - | - | - | - | - | - | - |
| C309.2 | 3 | 1 | - | - | 2 | - | - | - | - | - | - | - |
| C309.3 | 3 | 1 | 1 | - | 2 | - | - | - | - | - | - | - |
| C309.4 | 3 | 2 | 1 | - | 2 | - | - | - | 2 | - | - | 2 |
| C309.5 | 2 | - | 1 | 2 | 3 | - | - | 3 | 3 | 3 | 3 | 2 |
| C309 | 2.8 | 1.25 | 1 | 2 | 2.2 |  |  | 3 | 2.5 | 3 | 3 | 2 |

**JUSTIFICATION FOR CORRELATION**

|  |  |  |
| --- | --- | --- |
| **SNO** | **RELATED POs** | **JUSTIFICATION** |
| C309.1 | PO1, PO2, PO5 | Students may apply the knowledge in concepts of databases to design and develop applications to find solutions for complex problems.  Students may collect the requirements from the users, analyze it and design a database that satisfies the requirements.    Students shall learn the use of tools for developing database applications. |
| C309.2 | PO1, PO2, PO5 | Students may apply the knowledge in procedural programming using PL/SQL to design and develop applications for complex problems.  Students may design a database and implement the programming aspect using PL/SQL to satisfy the user requirements.    Students shall learn the use of modern and commercial database management systems for the implementation of database applications. |
| C309.3 | PO1, PO2,PO3, PO5 | Students may apply the knowledge in cursors and triggers in PL/SQL to design and develop applications with constraints and handle events.  Students may design a database and implement event handling and access multiple data at the same time using cursors and triggers in PL/SQL.  This knowledge helps to design solutions for complex engineering problems and design applications that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.  Students shall learn the use of modern and commercial database management systems for the implementation of database applications. |
| C309.4 | PO1, PO2,PO3, PO5,PO6,PO9, PO12 | Students may apply the knowledge creating GUI’s, Event handling and database connectivity to develop database applications.  Students may develop user friendly applications by analyzing the requirements.  Design applications for complex problems that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.  Students shall learn the use of modern and commercial database management systems and front end tools for designing GUIs for the implementation of database applications.  Students may be able to function effectively as an individual, and as a member or leader in diverse teams.  Students shall have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change |
| C309.5 | PO1, PO3,PO4, PO5,PO8, PO9, PO10, PO11, PO12 | Students may apply the fundamental knowledge in databases, creating GUI’s, Event handling and database connectivity to develop applications.  Design and develop applications for complex problems with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.  Students may use research-based knowledge and methods to analyze, design and develop solutions for complex problems.  Students shall learn the use of modern and commercial database management systems and front end tools for designing GUIs and different programming languages for the implementation of database applications.  Students can apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice during the project development.  Students may be able to function effectively as an individual, and as a member or leader in diverse teams.  Students may communicate effectively and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.  Students shall have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change |

**CORELATION BETWEEN COURSE OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES**

|  |  |  |  |
| --- | --- | --- | --- |
| **CO** | **PSO1** | **PSO2** | **PSO3** |
| C309.1 | 2 | 2 | - |
| C309.2 | 1 | 1 | - |
| C309.3 | 1 | 1 | - |
| C309.4 | 2 | 2 | 3 |
| C309.5 | 3 | 3 | 3 |
| C309 | 1.8 | 1.8 | 3 |

**JUSTIFICATION FOR CORELATION**

|  |  |  |
| --- | --- | --- |
| **SNO** | **RELATED PSOs** | **JUSTIFICATION** |
| C309.1 | PSO1, PSO2 | Students shall apply the knowledge in writing DDL and DML commands while developing software application with backend databases.  .  Students can apply the knowledge in database design using ER Diagrams and other computerized tools. |
| C309.2 | PSO1, PSO2 | Students may use the knowledge in PL/SQL programming to understand procedural programming.  Students can apply the knowledge in PL/SQL as a base to develop software applications. |
| C309.3 | PSO1, PSO2 | Students can use cursors and triggers for event handling to stored program concepts while developing software applications.  Students may perform event handling and access multiple data simultaneously to implement some functionality using cursors and triggers. |
| C309.4 | PSO1, PSO2, PSO3 | Students can use the knowledge in creating GUIs, event handling to stored program concepts while developing software applications.  Students may perform event handling and access multiple data simultaneously to implement some functionality using cursors and triggers.  Students may develop the ability to design and manage small-scale projects with the basic knowledge in developing GUIs and event handling. |
| C309.5 | PSO1, PSO2, PSO3 | Students may use their knowledge in the concepts of database management to construct software systems of varying complexity.  Students shall be able to apply the knowledge in drawing ER diagrams and other computerized tools for database design.  Students shall develop the ability to design and manage small-scale projects to develop a career in a related industry. |

**GAPS IN THE SYLLABUS - TO MEET INDUSTRY/PROFESSION REQUIREMENTS:**

|  |  |  |
| --- | --- | --- |
| **SNO** | **DESCRIPTION** | **PROPOSED**  **ACTIONS** |
| 1 | NIL |  |
| 2 |  |  |
| 3 |  |  |

**TOPICS BEYOND SYLLABUS/ADVANCED TOPICS/DESIGN:**

|  |  |  |
| --- | --- | --- |
| **Sl.No** | **Topic** | **Reason for introduction** |
| 1 | Study of modern databases | Students’ needs exposure to a variety of modern databases for handling different data as the technology evolves. |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |

**WEB SOURCE REFERENCES:**

|  |  |
| --- | --- |
| 1 | www.w3schools.com |
| 2 | www.docs.oracle.com |
| 3 | www.sqlcourse.com |
| 4 | www.beginner-sql-tutorial.com |
| 5 | www.plsql-tutorial.com |
| 6 | www.ibm.com |
| 7 | www.tutorialspoint.com |

**DELIVERY/INSTRUCTIONAL METHODOLOGIES:**

|  |  |  |  |
| --- | --- | --- | --- |
| CHALK & TALK | STUD. ASSIGNMENT | WEB RESOURCES | TUTORIAL |
| LCD/SMART BOARDS | STUD. SEMINARS |  |  |

**DELIVERY METHODS USED FOR EACH COURSE OUT COME**

|  |  |
| --- | --- |
| **SNO** | **DELIVERY METHODS** |
| C306.1 | CHALK & TALK  LCD/SMART BOARDS |
| C306.2 | CHALK & TALK  LCD/SMART BOARDS |
| C306.3 | CHALK & TALK  LCD/SMART BOARDS |
| C306.4 | CHALK & TALK  LCD/SMART BOARDS |
| C306.5 | CHALK & TALK  LCD/SMART BOARDS |

**ASSESSMENT METHODOLOGIES-DIRECT.**

|  |  |  |  |
| --- | --- | --- | --- |
| ASSIGNMENTS | STUD. SEMINARS | TESTS/MODEL EXAMS | UNIV. EXAMINATION |

**ASSESSMENT METHODOLOGIES-INDIRECT.**

|  |  |
| --- | --- |
| STUDENT FEEDBACK ON FACULTY (ONCE) |  |

**ASSESSMENT METHODOLOGIES USED FOR EACH COURSE OUT COME**

|  |  |  |
| --- | --- | --- |
| **SNO** | **ASSESSMENT METHODOLOGIES-DIRECT** | **ASSESSMENT METHODOLOGIES-INDIRECT** |
| C306.1 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, | STUDENT FEEDBACK ON FACULTY |
| C306.2 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, | STUDENT FEEDBACK ON FACULTY |
| C306.3 | UNIV. EXAMINATION, TESTS/MODEL EXAMS, | STUDENT FEEDBACK ON FACULTY |
| C306.4 | UNIV. EXAMINATION, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |
| C306.5 | UNIV. EXAMINATION, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |
| C306.6 | UNIV. EXAMINATION, TESTS/MODEL EXAMS | STUDENT FEEDBACK ON FACULTY |

**Prepared by Verified by Approved by**

**(Course Coordinator) (Stream Coordinator) (Programme Coordinator)**

**Mrs Resmi Cherian Mrs. Ritty Jacob Dr. K N Ramachandran Nair Name and Signature Name and Signature Name and Signature**