

Sant Gadge Baba Amravati University, Amravati
Part B
Syllabus Prescribed for the Year 2023-24
UG Programme: B.Sc-Part-II [Computer Science/Computer Application (Voc/ Non-Voc)/IT]
Semester-IV

Code of the Course/Subject	Title of the Course/Subject	(Total Number of Periods)
2CS2	RDBMS and Core Java	72

- Course Outcomes:**
1. Understanding basics concepts of DBMS
 2. Demonstrating SQL commands
 3. Demonstrating PL/SQL concepts
 4. Writing basic java programs using basics features of Java programming language/
 5. Demonstrating concepts of OOP's using classes, Inheritance, Interfaces etc.

Unit	Content	No of Periods
Unit I	Fundamentals of DBMS: Traditional Vs DBMS File approach, DBMS Architecture, Data Models, Relational Model, Relations, Domain and Attributes, Keys, E-R diagram, reducing ER diagram to table, Functional Dependency, Normalization: 1NF, 2NF, 3NF, 4NF, BCNF	10
Unit II	Introduction to SQL: Components of SQL, data types, operators DDL Commands: CREATE, ALTER, DROP, RENAME, DML Commands: SELECT, INSERT, DELETE & UPDATE; Clauses: ORDER BY, GROUP BY and HAVING; Joins and Unions: Self, Equi and Outer Join, Unions and Intersection. Functions: aggregate functions, string functions.	12
Unit III	PL/SQL: Features and block structure, variables and constant, data types, Identifiers, Operators and expression, Conditional statement, iterative statement. Cursor : Concepts of cursor, types of cursor, declaring, opening, using cursors, fetching data, closing a cursor, cursor attributes, Handling Exceptions, Creating Procedures, Creating Function, Triggers: Create Triggers, Types of Triggers, Creating BEFORE and AFTER Triggers, INSTEAD-OF triggers, Inserting, Updating and Deleting Triggers.	12
Unit IV	Introduction to JAVA: History and evolution, Feature, JRE, JDK, JVM, Tokens of Java, Data types and Literals, Operators, Structure of Java Program, Access controls, modifiers, type conversion and casting, Control of Flow: Selection Statements, Iteration Statements. Command Line Argument, Arrays.	12
Unit V	Classes & OOPs: Class, Object, Method, Constructor: types, this Keyword, Polymorphism: Overloading & Overriding, Inheritance: types of inheritance, Super, Abstract class , Interfaces: Interface concept, Defining, and Implementing of Interface., Using Final (variables , methods and classes). Garbage Collection.	12
Unit VI	String & Packages: String: String operation, String comparison, Searching and modifying string, StringBuffer. Wrapper classes, Packages: Package concept, Defining Package, organizing classes and interfaces in packages, making jar files for library packages, Java In-built Package.	10
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**Activities	1. Assignments 2. Quizzes 3.Seminars 4. Internal Assessments	4

Course Material/Learning Resources

Text books:

1. Introduction to Database Management Systems by Muzumdar TMH
2. Database System Using Oracle: A simplified Guide to SQL & PL/SQL : Nilesh Shah, PHI Publication
3. Herbert Schiedt “Java the Complete Reference”, TMH
4. Teach Yourself 'Java' in 2 Hrs : By Sams.
5. Java for You : By P. Koparkar

Reference Books:

1. Fundamentals of Database Systems (4th Ed) By: Elmasri and Navathe
2. Database System Concepts (4th Ed) By: Korth, Sudarshan, Silberschatz
3. Patricks Naughton, “Java Handbook”,Osborne McGraw Hill
4. Programming with JAVA - A Primer : By E.Balguruswamy (Tata McGraw)

Weblink to Equivalent MOOC on SWAYAM if relevant:

Weblink to Equivalent Virtual Lab if relevant:

Any pertinent media (recorded lectures, YouTube, etc.) if relevant:

Identify Employability Skills for SEM/SEC		
<input type="checkbox"/> Interpersonal Skills	<input type="checkbox"/> Information Use	<input type="checkbox"/> Technology Use
<input type="checkbox"/> Personal Qualities	<input type="checkbox"/> Communication Skills	<input type="checkbox"/> Applied Academic Skills
<input type="checkbox"/> Resource Management	<input type="checkbox"/> Systems Thinking	<input type="checkbox"/> Critical Thinking Skills

Employability Skills Categories

Effective Relationships	Interpersonal Skills Personal Qualities
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Workplace Skills	Resource Management Information Use Communication Skills Systems Thinking Technology Use
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Applied Knowledge	Applied Academic Skills Critical Thinking Skills
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