



**Practical course based on BS12001 and BS12002**  
**Problem Solving using Computer and 'C' programming and Database management system**  
**[CORE COURSE]**

Semester – I	Credits: 1.5	Subject Code: BSP12009	Lectures: 40
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**Course Outcomes:**

**At the end of this course, the learner will be able to:**

- Recognize the program development life cycle.
- Solve simple computational problems using modular design and basic features of the 'C' language.
- Solve real world computational problems.
- Describe basic query processing operations. Design E-R Model for given requirements and convert the same into database tables.
- Evaluate operations on database management systems
- Practice the basic query processing operations.

<b>Unit 1: Problem Solving using Computer and 'C' programming(Section A)</b>	<b>20</b>
<ul style="list-style-type: none"> <li>• Assignment 1: Introduction to Linux Operating system (Commands, Editor) Demonstration of C-programming setup, Postgresql Setup</li> <li>• Assignment 2: Problem Solving using Pseudocode and Flowchart, Simple programs, Understanding errors and error handling using debugger.</li> <li>• Assignment 3: Decision Making Control Structures.</li> <li>• Assignment 4: Loop Control Structures</li> <li>• Assignment 5: Functions (User Defined functions, Library functions ), Recursion</li> </ul>	

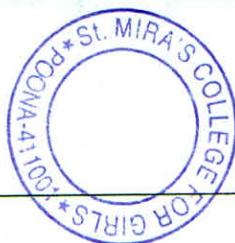
**Course Outcomes:**

**At the end of this course, the learner will be able to:**

- Solve real world computational problems.
- Evaluate operations on relational database management systems.
- Understand basic query processing operations. Design E-R Model for given requirements and convert the same into database tables.
- Understand constraints, views, triggers, and functions in databases

<b>Unit 2: Practical Course on Database Management Systems (Section B)</b>	<b>20</b>
<ul style="list-style-type: none"> <li>• <b>Assignment 1:</b> To create simple tables with only the primary key constraint ( as a table level constraint &amp; as a field level constraint) (include all data types) and referential integrity constraint, PK constraint.</li> <li>• <b>Assignment 2:</b> To create one or more tables with following constraints, (Check constraint, Unique constraint, Not null constraint) and simple DDL and DML statements such as drop table, alter table, insert / update / delete records using tables created in previous assignments. ( use simple forms of insert / update / delete</li> </ul>	

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<p>statements)</p> <ul style="list-style-type: none"> <li>• <b>Assignment 3:</b> To query the tables using simple form of select statement Select from table [where order by] Select from table [where group by &lt;&gt; having &lt;&gt; order by &lt;&gt;]</li> <li>• <b>Assignment 4:</b> To query tables using nested queries (use of 'Except', exists, not exists, all clauses, join)</li> <li>• <b>Assignment 5:</b> To create views</li> </ul>	
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