

Course: Major
Computer Science Practical-C Programming and PostgreSQL

Semester: I	Credits: 2	Subject Code: BSMAJCS123122	Lectures: 60
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Course Outcomes:

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

- CO1 -Understand the program development life cycle.
- CO2 -Solve simple computational problems using modular design and basic features of the 'C' language.
- CO3 -Solve real world computational problems.
- CO4 -Evaluate operations on relational database management systems.
- CO5 -Understand basic query processing operations. Design E-R Model for given requirements and convert the same into database tables.
- CO6 -Understand constraints, views, triggers, and functions in databases

Unit 1: Introduction to C programming

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- Assignment 1: Introduction to Linux Operating system (Commands, Editor), Demonstration of C-programming setup, Postgresql Setup
- Assignment 2: Problem Solving using Algorithm and Flowchart
- Assignment 3: Simple programs
- Assignment 4: Decision Making, Control Structures
- Assignment 5: Loop Control Structures
- Assignment 6: Functions (User Defined functions, Library functions and Recursion)

Unit 2: Database Management System

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- Assignment 1: To create one or more tables with following constraints, (Primary key, foreign key, Check constraint, Unique constraint, Not null constraint)
- Assignment 2: simple DDL statements such as drop table, alter table, add constraints, drop constraints
- Assignment 3: simple DML statements such as insert / update / delete records using tables created in previous assignments. (use simple forms of insert / update / delete statements)
- Assignment 4: To query the tables using simple form of select statement
- Assignment 6: To query tables using nested queries and set operations.
- Assignment 6: To create and execute views

Recommended Text Books:

- B. Gottfried, 3rd edition, Schaum's outline Series, *Programming with C*, Tata McGraw Hill, 2018
- E. Balagurusamy, *Programming in ANSI C*, 7th Edition, McGraw Hill, 2012



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Reference Books:

- Abrams, M.H. *A Glossary of Literary Terms*. Prism: Bangalore; 2004.
- Ajay Mittal, *Programming in C, A Practical Approach*, Pearson, 2010
- Behrouz A. Forouzan, Richard F, *A Structured Programming Approach Using C*, Gilberg, Cengage Learning India, 2007
- Elmasri, Navathe, *Fundamentals of Database Systems* -5th edition –Pearson.
- Joshua D. Drake, John C Worsley, *Practical Postgresql*, (O'Reilly publications)
- Raghu Ramakrishnan and Johannes Gehrke, *Database Management Systems*, McGraw-Hill Science/Engineering/Math; 3rd edition, ISBN: 9780072465631

Websites:

- <https://www.learn-c.org/>
- <https://www.cprogramming.com/>
- <http://www.postgresql.org/docs/9.3/static/tutorial.html>

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