22BEAS114 COMPUTER PROGRAMMING AND DATA STRUCTURES

Source: https://tseduhub.
blogspot.com/2017/05/
computer-programming-
books.html

Hours Per Week :

L	T	P	C
1	2	2	3

PREREQUISITE KNOWLEDGE: Basics of programming.

COURSE DESCRIPTION AND OBJECTIVES:

The goal of this course is to provide exposure to develop small programs in C language and thus equip them to solve problems in their chosen field of study using computer program.

MODULE-1

UNIT-1   **4L+8T+8P=20 Hours**

LANGUAGES:

Introduction to high level languages, Primary data types and user defined data types, Variables, typecasting.

UNIT-2   **04L+8T+8P=20 Hours**

OPERATORS:

Operators, Building and evaluating expressions, Standard library functions, Managing input and output, Decision making, Branching, Looping, Arrays.

PRACTICES:

- Familiarizing with Turbo C IDE.
- Building an executable version of C program.
- Debugging a C program.
- Developing and executing simple programs.
- Creating programs using decision making statements such as if, go to & switch.
- Developing program using loop statements while, do & for.
- Using nested control structures.
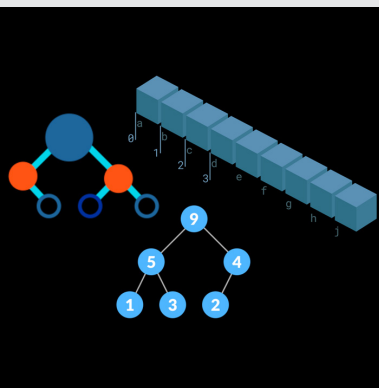- Familiarizing with one and two dimensional arrays.

MODULE-2

UNIT-1   **4L+8T+8P=20 Hours**

DEFINED FUNCTIONS:

User defined functions, passing arguments and returning values, recursion, scope and visibility of a variable.

UNIT-2   **4L+8T+8P=20 Hours**

STRUCTURES:

String functions, Structures and union, Pointers, Stacks, Push/Pop operations, Queues, Insertion and deletion operations, Linked lists.

PRACTICES:

- Using string functions.
- Developing structures and union.
- Creating user defined functions.
- Using local, global & external variables.
- Using pointers.
- Implementing Stacks.
- Implementing push/pop function.
- Creating queues.
- Developing linked lists in C language.
- Insertion/Deletion in data structures.

COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Apply the basic terminology used in computer programming to write, compile & debug programs in 'C' language.	Apply	1	1, 2, 4, 6, 7, 9
2	Apply different data types to design programs involving decisions, loops and functions.	Apply	1	1, 2, 3, 4, 6, 9
3	Apply various headers for specific purpose.	Apply	2	1, 2, 3, 4, 6, 7, 9, 11
4	Create new programs for specific applications	Create	2	1, 2, 6, 7, 9

TEXT BOOKS:

1. Rajaraman V. "Computer Oriented Numerical Methods" Prentice Hall of India. Pvt. Ltd., New Delhi, 2006.
2. Balagurusamy E. "Programming in C"Tata McGraw Hill Publishing Co. Lt 12/4 Asaf Ali Road, New Delhi, 2005

REFERENCE BOOKS:

1. Rajaraman V. "Computer Programming in C". Prentice Hall of India Pvt.Ltd., New Delhi, 2002.
2. Bronson G and Menconi S. "A First Book of 'C' Fundamentals of 'C' Programming" Jaico Publishing House, New Delhi, 2005.

SKILLS:

✓ *Familiarize with basic keyword and logic used for programming tool.*

✓ *Develop algorithms for real time applications.*