

Babasaheb Bhimrao Ambedkar University

(A Central University)

Vidya Vihar, Rae Bareilly Road, Lucknow - 228 025.

बाबासाहेब भीमराव अम्बेडकर विश्वविद्यालय
विद्या विहार, रायबरेली रोड, लखनऊ - 228 025

Letter No: 63/DCS/BBAU/2020

Date: 07/01/2020

DEPARTMENT OF COMPUTER SCIENCE

NOTICE

The Department of Computer Science is offering three optional papers under open elective course in 2nd semester as detailed below:

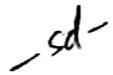
S. No.	Course Code	Course Name	Maximum Marks		Credit	
			End Semester	Sessional		
				I		II
1.	MCAOE-201	Programming in C	70	15	15	04
2.	MCAEOE-201	Basic of programming in C	70	15	15	04
3.	MTCOE-201	Object Oriented Concepts with C++	70	15	15	04

The students of the other Department can opt any one of the courses mentioned above under CBCS system. For further details regarding time table kindly see the notice board of the Department. Dr. Narander Kumar, DCS is the student advisor for the course.


Head, DCS

Copy to for information:

1. A.R. to Hon'ble VC, BBAU
2. Dean (Academic), BBAU
3. Dean, SIST, BBAU
4. All Deans/ HODs, BBAU
5. Registrar, BBAU
6. S.O. to COE, BBAU
7. Notice Board, DCS
8. I/c University website for its uploading on University website


Head, DCS

MCAOE-201 PROGRAMMING IN C

CREDIT: 04 (3-1-0)

Objective:

- To provide basic concepts of programming using C language
- To make the students aware about the uses of loops, pointers and functions in C

Unit II

Basics of programming: Approaches to Problem Solving, Concept of algorithm and flow charts, Constants, Variables and Keywords, Rules for Constructing Variable Names, Fundamental data types- Character type, integer, short, long, unsigned, single and double floating point, Storage classes- automatic, register, static and external, Operators and expression using numeric and relational operators, mixed operands, type conversion, logical operators, bit operations, assignment operator, operator precedence and associativity.

Unit 2

Conditional program execution: if statement, use of Logical Operators with if, multiple statements within if, if-else statement, nested if-else, switch statement, basic format of the switch statement, decision using switch, switch case control structure, use of break and default with switch, switch versus if-else, program loops and iterations: use of while, do while and for loops, multiple initializations in the for loop, use of break and continue statements.

Unit III

Arrays: Array notation and representation, array initialization, bounds checking, passing array elements to a function, searching an element in an array, sorting array elements. Structure: declaring a structure, accessing structure elements, array of structures, union: defining a union, accessing union members, enum related data types. Pointers: Introduction, declaration, applications.

Unit IV

Functions: Introduction, defining a function, return type of function, calling a function, passing values to functions, types of functions, functions with array, call by value and call by reference, recursive functions, Introduction of File handling, opening a file, reading from a file, writing into a file, closing the file, file opening modes.

Suggested Readings:

1. Let us C, Yashwant Kanetkar, BPB Publication.
2. Computer Basics and C Programming by V.Rajaraman, PHI Learning Pvt. Limited - 2015.
3. Understanding Pointers in C by Yashavant Kanetkar, BPB Publication.
4. Programming in C by Kochan Stephen G. Pearson Education - 2015.
5. Computer Concepts and Programming in C by D.S. Yadav and Rajeev Khanna, New Age International Publication.

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MCAEOE-201 BASICS OF PROGRAMMING IN C

CREDIT: 04 (2-1-0)

Objective

- To provide basic concepts of programming using C language
- To make the students aware about the uses of data types, loops and structures in C

Unit I

Basics of programming: Approaches to Problem Solving, Concept of algorithm and flow charts, Fundamental data types- Character type, integer, short, long, unsigned, single and double floating point, Storage classes- automatic, register, static and external, Operators and expression using numeric and relational operators, mixed operands, type conversion, logical operators, bit operations, assignment operator, operator precedence and associativity.

Unit II

Conditional program execution: Applying if and switch statements, nesting if and else, use of break and default with switch, program loops and iterations: use of while, do while and for loops, multiple loop variables, use of break and continue statements..

UNIT III

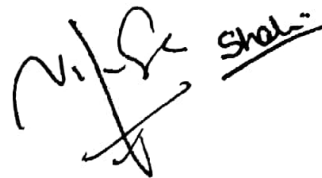
Arrays: Array notation and representation, manipulating array elements, using multi dimensional arrays. Structure, union, enumerated data types. Pointers: Introduction, declaration, applications

UNIT IV

Functions: Introduction, types of functions, functions with array, passing values to functions, recursive functions, Introduction of File handling.

Suggested Readings:

1. The C programming by Kernighan Brain W. and Ritchie Dennis M., Pearson Education .
2. Computer Basics and C Programming by V.Rajaraman , PHI Learning Pvt. Limited – 2015.
3. Programming in C by Kochan Stephen G. Pearson Education – 2015.
4. Computer Concepts and Programming in C by D.S. Yadav and Rajeev Khanna, New Age International Publication.



MTC SOE-201 OBJECT ORIENTED CONCEPTS WITH C++

CREDIT: 04 (2-1-0)

Course objective:

- To understand basic concepts and syntax of C++ programming Language.

UNIT - I

Principles of OOP: Programming paradigms, basic concepts, benefits of OOP, applications of OOP Introduction to C++: History of C++, structure of C++, basic data types, type casting, type modifiers, operators and control structures, input and output statements in C++. Classes and objects: class specification, member function specification, scope resolution operator, access qualifiers, instance creation.

UNIT-II

Functions: Function prototyping, function components, passing parameters, call by reference, return by reference, inline functions, default arguments, overloaded function. Pointers: Array of objects, pointers to objects, this pointer, dynamic allocation operators, dynamic objects.

UNIT - III

Constructors: Constructors, parameterized constructors, overloaded constructors, constructors with default arguments, copy constructors, static class members and static objects. Operator overloading: Overloading unary and binary operator, overloading the operator using friend function, stream operator overloading and data conversion.

UNIT - IV

Inheritance: Defining derived classes, single inheritance, protected data with private inheritance, multiple inheritance, multi-level inheritance, hierarchical inheritance, hybrid inheritance, multi path inheritance, constructors in derived and base class, abstract classes, virtual function and dynamic polymorphism, virtual destructor.

Suggested Reading

1. Complete Reference of C++ by Herbert Schildt, India Professional
2. Object Oriented Programming with C++ By E.Balaguruswamy, TMH
3. Object Oriented Turbo C Plus Plus by Robert Lafore, Pearson
4. Programming with C Plus Plus by D.RaviChandra, India Higher Education

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