

PROGRAMME: THREE-YEAR DEGREE

Semester-wise Syllabus under CBCS (w.e.f. 2020-21 Admitted Batch)

II Year B.A. (CA) / B Com (CA) / B.Sc. (CA), SEMESTER- III

Discipline: COMPUTER APPLICATIONS

PROGRAMMING WITH C & C++

Semester	Course Code	Course Title	Hours/Week	Hours	Credits
III	C3	Programming with C & C++	4	60	3

Model Outcomes:

At the end of the course, the students is expected to DEMONSTRATE the following cognitive abilities (thinking skill) and psychomotor skills.

C. Remembers and states in a systematic way (Knowledge)

1. Develop programming skills
2. Declaration of variables and constants use of operators and expressions
3. learn the syntax and semantics of programming language
4. Be familiar with programming environment of C and C++
5. Ability to work with textual information (characters and strings) & arrays

D. Explains (Understanding)

6. Understanding a functional hierarchical code organization
7. Understanding a concept of object thinking within the framework of functional model
8. Write program on a computer, edit, compile, debug, correct, recompile and run it

E. Critically examines, using data and figures (Analysis and Evaluation)

9. Choose the right data representation formats based on the requirements of the problem
10. Analyze how C++ improves C with object-oriented features
11. Evaluate comparisons and limitations of the various programming constructs and choose correct one for the task in hand.

D. Working in 'Outside Syllabus Area' under a Co-curricular Activity(Creativity)

Planning of structure and content, writing, updating and modifying computer programs for user solutions

*E. Exploring C programming and Design C++ classes for code reuse (Practical skills***)*

SYLLABUS

Unit	Details
I Introduction:	Introduction - Structure of C program – C character set, Tokens: Constants, Variables, Keywords, Identifiers – C data types - C operators (arithmetic, relational, logical, increment and decrement) - Standard I/O in C (scanf, printf) - Conditional Control statements (if and Switch) Statements
II Loops And Arrays:	Repetitive statements: While, Do While and For Loops - Use of Break and Continue Statements – Arrays: Introduction – Types of arrays, one dimensional arrays - Declaration of one dimensional arrays – Accessing array elements – Storing values in an array – Two Dimensional Arrays Declaration of two dimensional arrays – Accessing array elements – Storing values in 2-D arrays
III Strings and Functions:	Strings: Definition, Declaration and Initialization of String Variables - String Handling Functions – Functions: Defining Functions - Function Call – passing parameters: Call By Value, Call By Reference – Recursion
IV Classes and Objects	Introduction to OOP and its basic features - C++ program structure - Classes and objects - Friend Functions- Static Functions –Constructor – Types of constructors – Destructors - Unary Operators
v Inheritance:	Inheritance - Types of Inheritance -Types of derivation- Public – Private - Protected Hierarchical Inheritance - Multilevel Inheritance – Multiple Inheritance - Hybrid Inheritance

Learning Resources (Programming with C & C++)

Reference Books:

1. Let Us C YashavantKanetkar
2. Mastering C by K R Venugopal and Sudeep R Prasad, McGraw Hill
3. E. Balagurusamy "Object oriented programming with C++
4. The C++ Programming Language Bjarne Stroustrup