GITAM INSTITUTE OF MANAGEMENT (GIM)
Gandhi Institute of Technology and Management (GITAM)
(Declared as Deemed to be University u/s 3 of UGC Act. 1956)
Visakhapatnam – 45.

Course Code: MAN 123	**Course Title: Programming in C++**	
SEMESTER: I	**Course Type: Core**	**Credits: 3**
Home Programme(s): BBA (BUSINESS ANALYTICS)		**Batch: 2020 -2023**
Course Leader:		

Course description and learning outcomes

C++ is a general purpose programming language and has imperative, object-oriented and generic programming features. Understanding the concepts in C++ would lay the foundation for learning the other programming languages.

Learning Objectives

- To acquaint the students with the programming concepts of C++
- To give hands on experience in writing basic programs in C++
- To enable students to write OOP programs in C++

On successful completion of this course, students will be able to:

	Learning Outcome	Assessment
CO1	Understand different elements in C++ programming language	A1
CO2	Write basic programs in C++	A2, A3,A4
CO3	Write object oriented programs in C++	A2, A3, A4
CO4	Work with C++ files	A2, A3,A4
CO5	Do Exception handling in C++ program	A2, A3,A4

Course outline and indicative content

Unit - I: (10 sessions) (CO1, L2)
Introduction to C++: C++ characteristics, Identifiers and Keywords, Basic Data Types, Variables and Constants, Input and Output Statements, Operators and Expressions

Unit – II: (10 sessions) (CO2, L3, L4, L5)
Control Structures: Conditional Statements, Looping Statements; Arrays – Single dimensional, Multi dimensional, Working with Strings, Functions, Recursion, Pointers, Structures in C++

Unit - III: (10 sessions) (CO3, L3, L4, L5)
Object Oriented Programming: Object Oriented Concepts, Classes and Objects, Constructors and Destructors, Inheritance – Single Inheritance, Multiple Inheritance, Protected Keyword, Polymorphism

Unit – IV: (10 sessions) (CO4, L3, L4, L5)
C++ Files and Streams: Opening a File, Writing to a File, Reading from a File, Managing I/O Streams

Unit – V: (10 sessions) (CO5, L3, L4, L5)
Exception handling: Throwing an exception, catching an exception: The try block, Exception handler

Assessment methods

Task		Task type	Task mode	Weightage (%)
A1	Quiz	Individual		10
A2	Assignments / Lab Tasks / Written Test/Coursera Groups* or Individual	Individual / Group		20
A3	Record Work	Individual		10
A4	Lab Exam	Individual		60

Mapping Cos – Blooms Levels – Assessment Tools

Knowledge dimension / Cognitive dimension	L1. Remember	L2. Understand	L3. Apply	L4. Analyze	L5. Evaluate	L6. Create
Factual Knowledge						
Conceptual Knowledge		CO1 (A1)				
Procedural Knowledge			CO2(A3) CO3(A3) CO4(A3) CO5(A3)	CO2(A2) CO3(A2) CO4(A2) CO5A2)	CO2(A4) CO3(A4) CO4(A4) CO5(A4)	
Meta Cognitive Knowledge						

Learning and teaching activities

Classroom Lectures, Application cases, Demonstration, Lab Sessions

Teaching and learning resources

Computer Lab, C++ Editor and Compiler, Textbooks, Ebooks, Reference Materials, Web resources

CO PO Mapping

This is to map the level of relevance of the Course Outcome (CO) with Programme Outcome (PO).

0= No Relevance; 1= Low Relevance; 2= Medium Relevance; 3= High Relevance

CO PO Mapping	PO1	PO2	PO3	PO4	PO5	PO6	Sum
CO1	0	1	2	1	1	3	8
CO2	0	1	2	1	1	3	8
CO3	0	1	2	1	1	3	8
CO4	0	1	2	1	1	3	8
CO5	0	1	2	1	1	3	8
Target Level Max.	0	5	10	5	5	15	40

BBA BA -Programme Outcomes (POs)

1	Ability to understand the business problems with their knowledge in different functional areas of management.
2	Integrate with structured, semi – structured and unstructured data.
3	Utilize the tools such as Microsoft Excel, SPSS, R, Weka and Tableau to solve business analytics problems.
4	**A**bility to apply analytics techniques to analyze and interpret the data.
5	Incorporate the descriptive, predictive and prescriptive analytics.
6	Evaluate the necessary skills and understanding to take up advanced topics in the area of analytics and thus enhance their career prospects.