MANONMANIAM SUNDARANAR UNIVERSITY, TIRUNELVELI

UG COURSES – AFFILIATED COLLEGES
B.C.A.
(Choice Based Credit System)
(with effect from the academic year **2021-2022** onwards)

Sem. (1)	Pt. I/II/ III/ IV/V (2)	Sub No. (3)	Subject Status (4)	Subject Title (5)	Con-tact Hrs/ Week (6)	L Hrs./ Week (7)	T Hrs./ Week (8)	P Hrs./ Week (9)	C Credits (10)
II	I	8	Language	Tamil/Other Language	6	6	0	0	4
	II	9	Language	Communicative English	6	6	0	0	4
	III	10	Core	Object Oriented Programming with C++	4	5	0	0	4
	III	11	Major Practical - II	Object Oriented Programming with C++ Lab	4	0	0	4	2
	III	12	Add on Major (Mandatory)	Professional English for Physical Sciences - II	4				4
	III	13	Allied - II	Mathematical Foundation for Computer Science	4	3	0	0	3
	IV	14	Common	Value Based Education / Social Harmony	2	2	0	0	2
			Subtotal		30				23

Core - IIOBJECT ORIENTED PROGRAMMING WITH C++

Principles of Object-oriented Programming: Software Evolution – A look at Procedure-Oriented Programming – Object-Oriented Programming Paradigm – Basic concepts of object-Oriented Programming – Benefits of OOP – Object-Oriented Languages- Applications of OOP

Beginning with C++ : What is C++? – Applications of C++ - A simple C++ Program – More C++ statements – An example with Class- Structure of C++ Program – Reference Variables – Operators in C++ - Scope Resolution Operator – Member De referencing Operators – Memory Management Operators – Manipulators – Type Cast Operators

UNIT II

Functions in C++: Introduction – The Main Function – Function prototyping – Call by Reference – Return by reference – Inline Functions - Default Arguments – const Arguments – Function Overloading – Math Library Functions

Classes and Objects: Introduction - C Structure Revisited – Specifying a Class – Defining Member Function-A C++ Program with Class -Making an outside Function Inline –Nesting of Member Function – Private member functions- Arrays with in a class – Memory allocation for objects – Static Data Members – Static Member Functions, Arrays of objects – Objects as Function arguments – Friendly Functions – Returning Objects - Pointers to Members – Local Classes

UNIT III

Constructors and Destructors : Introduction – Constructors – Parameterized constructors – multiple constructors in a class – Constructors with Default arguments – Dynamic Initialization of Objects- Copy Constructors – Dynamic Constructors – Constructing two dimensional Arrays – Destructors

Operator Overloading and Type Conversion:

Introduction – Defining Operator Overloading – Overloading unary operators – Overloading Binary Operators – Overloading binary operators using Friends – Manipulation of strings using operators – Rules for overloading operators – Type conversions

UNIT IV

Inheritance : Extending Classes : Introduction – Defining Derived Classes – Single inheritance – Making a Private Member Inheritable – Multilevel Inheritance – Multiple Inheritance – Hierarchical Inheritance – Hybrid Inheritance
– Virtual Base Classes -Abstract Classes – Constructors in Derived Classes – Member Classes –Nesting of Classes

Unit V

Managing Console I/O Operations: Introduction - C++ Streams – C++ Stream Classes – Unformatted I/O Operations – Formatted Console I/O Operation – Managing output with Manipulators

Working with Files: Introduction – Classes for File Stream Operators – Opening and closing a File – Detecting end-of-file _ File Pointers and their Manipulators – Sequential Input and Output Operations – Error Handling During FileOperations - Command –Line Arguments.

TOTAL: 60 HOURS

Text Book:

Object Oriented Programming C++ Third Edition – E Balagurusamy, Tata McGraw-Hill Publishing Company Limited

Reference Book:

1. Complete Reference C++ - Herbert Schildt, Fourth Edition, Tata McGraw-Hill PublishingCompany Limited
2. Object Oriented Programming with ANSI and Turbo C++ - Ashok N. Kamthane, PearsonEdition
3. C++ How to Program – Deitel, Fifth Edition Prentice Hall of India
4. Programming with C++ - D.Ravichandran, Second Edition , Tata McGraw-Hill PublishingCompany Limited

OBJECT ORIENTED PROGRAMMING C++ PRACTICAL LIST

1. Finding the Volume of any three geometric figures using function Overloading
2. Exchange values between two class objects using friend functions
3. Define a class to represent a bank account

   Data Members:
1. Name of the Depositor	2. Account Name
3. Type of Account	
4. Balance amount in the Bank	

   Member Functions

1. To Assign initial values	3. To Deposit an amount
2. To withdraw an amount	4. To display name and balance

4. Write a main Program to test the program to

   Find the minimum of two objectsusing friend

   function

5. Using Dynamic Constructors concatenate two strings
6. Overload unary minus operator to change the sign of given vectors (3 elements)
7. Overload Binary + Operator to add two complex numbers
8. Add two vector objects . Use >> and << overloading
9. Process student Mark List using multilevel inheritance
10. Using Hierarchical Inheritance process employee details

Professional English-Semester-II [part-III -add on Course]
Weightage: 4 Credits Duration: 90hrs

Objectives:

The Professional Communication Skills Course is intended to help Learners in Arts and Science colleges

• Develop their competence in the use of English with particular reference to the workplace situation.

• Enhance the creativity of the students, which will enable them to think of innovative ways to solve issues in the workplace.

• Develop their competence and competitiveness and thereby improve their employability skills.

• Help students with a research bent of mind develop their skills in writing reports and research proposals.

Unit 1- Communicative Competence (18 hrs)

Listening – Listening to two talks/lectures by specialists on selected subject specific topics -(TED Talks) and answering comprehension exercises (inferential questions)

Speaking: Small group discussions (the discussions could be based on the listening and reading passages- open ended questions

Reading: Two subject-based reading texts followed by comprehension activities/exercises

Writing: Summary writing based on the reading passages.

Grammar and vocabulary exercises/tasks to be designed based on the discourse patterns of the listening and reading texts in the book. This is applicable for all the units.

Unit 2 - Persuasive Communication (18 hrs)

Listening: listening to a product launch- sensitizing learners to the nuances of persuasive communication

Speaking: debates – Just-A Minute Activities

Reading: reading texts on advertisements (on products relevant to the subject areas) and answering inferential questions

Writing: dialogue writing- writing an argumentative /persuasive essay.

Unit 3- Digital Competence (18 hrs)

Listening to interviews (subject related)

Speaking: Interviews with subject specialists (usingvideo conferencing skills)

Creating Vlogs (How to become a vlogger and use vlogging tonurture interests – subject related)

Reading: Selected sample of Web Page (subject area)

Writing: Creating Web Pages

Reading Comprehension: Essay on Digital Competence for Academic and Professional Life.

The essay will address all aspects of digital competence in relation to MS Office and how they can be utilized in relation to work in the subject area

Unit 4 - Creativity and Imagination (18 hrs)

Listening to short (2 to 5 minutes) academic videos (prepared by EMRC/ other MOOC videos on Indian academic sites – E.g.

https://www.youtube.com/watch?v=tpvicScuDy0)

Speaking: Making oral presentations through short films – subject based

Reading: Essay on Creativity and Imagination (subject based)

Writing – Basic Script Writing for short films (subject based)

- Creating blogs, flyers and brochures (subject based)

- Poster making – writing slogans/captions(subject based)

Unit 5- Workplace Communication& Basics of Academic Writing (18 hrs)

Speaking: Short academic presentation using PowerPoint

Reading & Writing: Product Profiles, Circulars, Minutes of Meeting.

Writing an introduction, paraphrasing,Punctuation(period, question mark, exclamation point, comma, semicolon, colon, dash, hyphen, parentheses, brackets, braces, apostrophe, quotation marks, and ellipsis) Capitalization (use of upper case)

Outcomes of the Course.

At the end of the course, learners will be able to,

• Attend interviews with boldness and confidence.

• Adapt easily into the workplace context, having become communicatively competent.

• Apply to the Research &Development organisations/ sections in companies and offices with winning proposals.

Instruction to Course Writers:

1. Acquisition of subject-related vocabulary should not be overlooked. Textboxes with relevant vocabulary may be strategically placed as a Pre Task or in Summing Up

2. Grammar may be included if the text lends itself to the teaching of a Grammatical item. However, testing and evaluation does not include Grammar.