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)	Su b 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 Credi ts (10)
I	Ι	1	Language	Tamil / Other Language	6	6	0	0	4
	II	2	Language	Communicative English	6	6	0	0	4
	III	3	Core	Programming in C	4	4	0	0	4
	III	4	Major Practical - I	C Programming Lab	4	0	0	4	2
	III	5	Add on Major (Mandatory)	Professional English for Physical Sciences - I	4				4
	III	6	Allied - I	Digital Design	4	4	0	0	3
	IV	7	Common	Environmental Studies	2	2	0	0	2
		·	Subtotal		30				23

MSU/ 2021-22 / UG-Colleges / Part-III (B.C.A) / Semester - I /

Core - 1Programming in C

Unit I

Overview of C:

Introduction- Importance of C - Sample C Programs - Basic structure of C - Executing C program

Constant, variables and data types:

Introduction- Character set - tokens – keywords and identifiers – constants – variables- data types – declaration of variables – assigning values of variables.

Operators and expressions:

Introduction – arithmetic of operations- relational operator – assignment operator – increment and decrement operator – conditional operator – bitwise operator – special operator – evaluation of expressions – precedence of arithmetic operators – type conversion in expression- operator precedence and associatively- mathematical functions

Unit II

Managing input and output operators:

Introduction: Reading a character- writing a character - formatted input - formatted output

Decision making and branching:

Introduction – decision making with IF statement- simple IF statement – The IF ELSE statement- nesting of IF – ELSE statement –ELSE IF ladders- The switch statement – The?: operators – The GOTO statement

Decision making and looping:

The While statement – The Do statement – The for statement- Jump in loops

Unit III Arrays:

One dimensional arrays – two dimensional arrays -Initializing two dimensional arrays – multi dimensionalarrays

Handling of character strings:

Introduction: declaring and Initializing string variables- Reading string from terminal- writing string to screen – arithmetic operation on characters – putting strings together – comparison of two strings together – string handling functions

Unit IV

User defined functions:

Introduction – need for user- define functions- A multi- function program – The form of C functions- return values and their types – calling a function- category of function – no argument and no return values – argument with no return values – argument with return values – handling of non integer functions – nesting of functions – recursion – function with arrays – the scope and life time of variables in functions.

Unit V Pointers

Introduction: understanding pointers – accessing the address of variables – declaring and initializing pointers – accessing a variable through its pointer – pointer expressions – pointer increments and scale factor – pointers and character strings – pointers and functions – pointer.

TOTAL: 60 HOURS

Text Book:

Programming in ANSI C –By E.Balagurusamy, Tata Mc Graw-Hill Publishing Company Reference

Book:

Programming with ANSI and TURBO C – by Ashok N. Kamthane

MSU/ 2021-22 / UG-Colleges / Part-III (B.C.A) / Semester – I / Major Practical-I

C Programming Lab – Practical List

- 1. Find the Area of the Triangle
- 2. To find the possible roots of the Quadratic equation
- 3. To arrange a List of numbers in Descending Order
- 4. To Find NcR Value using Functions
- 5. To Check given String is Palindrome or not
- 6. To find Transpose of a Matrix
- 7. To Multiply two Matrices
- 8. To Prepare a Mark list
- 9. To Sort a List of names in Aphabetical order

MSU/ 2021-22 / UG-Colleges / Part-III (B.C.A) / Semester – I / Allied – I

DIGITAL DESIGN

Unit I : Digital System and binary numbers:

Digital systems – binary numbers – number base conversion – Octal and hexa decimal numbers – complements – signed binary numbers – binary codes – binary storage and registers – binary logic. **Boolean algebra:** Introduction – basic definition – axiomatic definition of Boolean algebra – basic theorem and properties and ofBoolean algebra – Boolean functions.

Unit II : Logic gates:

Canonical and standard forms – other logic operations – digital logic gates and integrated circuits **Gate-Level minimization:**

Introduction : The Map method – Four- variable Maps – Five-variable Map – Product – ofsums simplifications-Don't conditions

Unit III : NAND and NOR implementation- other two level implementations – Exclusive OR Functions Combinational Logic: Introduction – Combinational circuits – Analysis Procedure - Design Procedure – Binary Adder – Subtractor – Decimal Adder - Binary Multiplier - Magnitude Comparator

Unit IV : Decoders - Encoders - Multiplexers

Synchronous Sequential Logic:

Introduction –Sequential Circuits – Storage Element Latches - Storage Element Flip- Flops - Analysis of ClockedSequential Circuits

Unit V :

Registers and Counters: Registers – Shift Registers – Ripple Counters – Synchronous Counters – Othercounters Memory : Introduction – Random access memory – Memory Decoding – Error Detection and Correction –Read Only Memory.

TOTAL: 45 HOURS

Text Book:

Digital Design Fourth Edition – M, Morris Mano, Michael D Ciletti , Prentice Hall of India Pvt Ltd. **Reference Books:**

1. Digital Principles and Applications Fourth Edition – Albert Paul Malvino, Donald P Leach, Tata McGraw Hill Publishing Company Ltd.

2. Digital Principles and Design – Donald d.Givone, Tata McGraw – Hill Publishing Company Limited

PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES-I Semester

OBJECTIVES:

- To develop the language skills of students by offering adequate practice in professional contexts.
- To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year physical sciences students
- To focus on developing students' knowledge of domain specific registers and the required language skills.
- To develop strategic competence that will help in efficient communication
- To sharpen students' critical thinking skills and make students culturally aware of the target situation.

LEARNING OUTCOMES:

- Recognise their own ability to improve their own competence in using the language
- Use language for speaking with confidence in an intelligible and acceptable manner
- Understand the importance of reading for life
- Read independently unfamiliar texts with comprehension
- Understand the importance of writing in academic life
- Write simple sentences without committing error of spelling or grammar

(Outcomes based on guidelines in UGC LOCF – Generic Elective)

NB: All four skills are taught based on texts/passages.

UNIT 1: COMMUNICATION

Listening: Listening to audio text and answering questions

Listening to Instructions

Speaking: Pair work and small group work.
Reading: Comprehension passages –Differentiate between facts and opinion
Writing: Developing a story with pictures.
Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT 2: DESCRIPTION

Listening: Listening to process description.-Drawing a flow chart.

Speaking: Role play (formal context)
Reading: Skimming/ScanningReading passages on products, equipment and gadgets.
Writing: Process Description –Compare and Contrast Paragraph-Sentence Definition and Extended definition-Free Writing.
Vocabulary:Register specific -Incorporated into the LSRW tasks.

UNIT 3: NEGOTIATION STRATEGIES

Listening: Listening to interviews of specialists / Inventors in fields (Subject specific) Speaking: Brainstorming.(Mind mapping). Small group discussions (Subject-Specific) Reading: Longer Reading text. Writing: Essay Writing (250 words) Vocabulary: Register specific - Incorporated into the LSRW tasks

UNIT 4: PRESENTATION SKILLS

Listening: Listening to lectures. Speaking: Short talks. Reading: Reading Comprehension passages Writing: Writing Recommendations Interpreting Visuals inputs Vocabulary: Register specific -Incorporated into the LSRW tasks

UNIT 5: CRITICAL THINKING SKILLS

 Listening: Listening comprehension- Listening for information.
 Speaking: Making presentations (with PPT- practice).
 Reading: Comprehension passages –Note making. Comprehension: Motivational article on Professional Competence, Professional Ethics and Life Skills)
 Writing: Problem and Solution essay– Creative writing –Summary writing
 Vocabulary:Register specific - Incorporated into the LSRW tasks