No	Course Information (2019-2020)	
1	Unit name:	Computer Science
2	Code:	EcE-41024
3	Classification:	Engineering subject
4	Credit value:	3(2-0-2)
5	Semester/ Year Offered:	1/4
6	Pre-requisite:	NA
7	Mode of delivery:	Lecture, Tutorial, Practical
8	Assessment system and breakdown of marks:	Practical, Tutorial
	Practical	20%
	Tutorial	10%
	Mid-term/ final Examination	70%
9	Academic staff teaching unit:	Department of Electronic Engineering
10	Course outcome of unit: After this course, students will be able CO1. To explain the structure of the computer system. CO2. To write the programs using decision making and looping statements, functions, arrays, strings, pointers and file with C programming languages CO3. To write the C programs using simple class, arrays, overloading operators, drives class, pointers, friend functions and file in OOP programming languages CO4. To write the C programs using Turbo C++ software	
	Synopsis of unit: The course introduces students to the study of computer system and programming language. Course covers the various structures and statements in the programming language. The course is designed to familiarize the student with C programming language. Computer Science is a comprehensive course in electrical engineering and can be applied in the field of industrial control, communication and any other various applications.	
	Topic: **Chapter Title** **1. Computer Science**	

		1.1 Computer in Your World
		1.2 The Central Processing Unit (CPU)
		1.3 Data Representation
		1.4 Input and Output
		1.5 Secondary Storage and File Organization
	1.	**Logic Description in Pseudo Code**
		1.1 Introduction
		1.2 Problem Solving and the Computer
		1.3 Pseudo-code in Use
		1.4 Symbols of Flowchart
		1.5 Type of Data
		1.6 Operators
	2.	**Control Structures**
		2.1 Control Structures
		2.2 Sequence Logic
		2.3 Selection Logic
		2.4 Iteration Logic
	3.	**Sub-Algorithm**
		3.1 Introduction
		3.2 Function Sub-Algorithm
		3.3 Procedure Sub-Algorithm
	4.	**Introduction to Turbo C Programming**
		4.1 What is computer Programming
		4.2 Starting Turbo C
		4.3 Turbo Editor Commands
	5.	**Elementary C**
		5.1 Program Layout
		5.2 Data Types
		5.3 Operators
		5.4 Name
	6.	**Standard Header File and their Functions**
		6.1 Basic I/O Header File
		6.2 Standard I/O Header File

	6.3	Console I/O Header File
	6.4	Standard Library Header File
	6.5	Character Type Header File
	6.6	Mathematical Header File
7.	**Conditional Branching Statements**	
	7.1	Types of Conditional Branching Statements
	7.2	The 'if ' Statement
	7.3	The "if-else " Statements
	7.4	The "if-else-if " Statements
	7.5	The "switch" Statements
	7.6	Multiple Conditions
8.	**Iteration (looping) Statements**	
	8.1	Types of Iteration (looping) Statements
	8.2	For Loop
	8.3	While Loop
	8.4	Do - While Loop
	8.5	Nested Loop
	8.6	Existing from loops
9.	**Functions**	
	9.1	Introduction
	9.2	Function Declarations
	9.3	Function Definitions
	9.4	Scope
	9.5	Reference
10.	**Arrays, Pointer and String**	
	10.1	Array
	10.2	Pointer
	10.3	Dynamics Arrays
	10.4	Sorting
	10.5	Searching
11.	**Format File**	
	1.1	File Declaration
	1.2	File Opening

		1.3 Writing to the File
		1.4 Reading from the File
		1.5 File Closing
		1.6 Format File Creating
		1.7 Accessing File
	1.	**Introduction**
		1.1 Advantages of OOP
		1.2 Software and Hardware Requirements
	2.	**Objects and Classes**
		2.1 A Simple Class
		2.2 Constructors and Destructors
	3.	**Arrays and Strings**
		3.1 Arrays as Class Member Data
		3.2 Arrays of Objects
		3.3 Strings
		3.4 Arrays of Strings
	4.	**Operator Overloading and Data Type Conversion**
		4.1 Overloading Unary Operators
		4.2 Overloading Binary Operators
		4.3 Data Type Conversion
	5.	**Inheritance**
		5.1 Drives Class Constructors
		5.2 Overriding Member Functions
		5.3 Class Hierarchies
	6.	**Pointers**
		6.1 Pointers to Objects
		6.2 An Array of Pointers to Objects
		6.3 Linked List using Pointers
		6.4 Pointers to Pointers
	7.	**Virtual and Friend functions**
		7.1 Virtual Functions
		7.2 Pure Virtual Functions
		7.3 Friend Functions

	7.4 Friend Classes **8. File and Streams** 8.1 Object Input / Output
14	Main references: Programming and problem solving Using C,instructional software research and development(ISRD Group),Application Programming in ANSI C, third edition, Richard Johnsonbaugh & Martin Kalin at library.
15	Additional references: http:// www.cms.montgomery college .edu/…/computing, http://www.web.cerritos.edu/…/cis https://www.cs.auckland.ac.nz/.../L12.pdf,https://www.universityefcalicut.info/../BscC.Science.pdf

Information on Lab Practical (2019-2020)

Lab	Activity
1	Topic : Conditional Branching Statements Outcomes: ➢ To write the C program using conditional branching statements Resources: Turbo C++ Software, PC
2	Topic : Looping statement Outcomes: ➢ To write the C program using the looping statements Resources: Turbo C++ Software, PC
3	Topic : Function Outcomes: ➢ To write the C program using functions Resources: Turbo C++ Software, PC
4	Topic : Array Outcomes: ➢ To write C program using array Resources: Turbo C++ Software, PC
5	Topic : File Outcomes: ➢ To write C program using file Resources: Turbo C++ Software, PC
6	Topic : Array and Pointer Outcomes: ➢ To write C++ program using array Resources: Turbo C Software, PC
7	Topic : Overloaded Operator Outcomes: ➢ To write C++ program using overloaded operators Resources: Turbo C++ Software, PC
8	Topic : Derived Class Function Outcomes: ➢ To write C++ program using derived class Resources: Turbo C Software, PC

9	Topic : Pointer Outcomes: ➢ To write C++ program using pointers Resources: Turbo C Software, PC
10	Topic : Friend Function and File Outcomes: ➢ To write C++ program using friend function ➢ To write C++ program using files Resources: Turbo C Software, PC

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