No	Course Information for Technical Programming (2019-2020)	
1	Unit name:	Technical Programming
2	Code:	EcE-21014
3	Classification:	Engineering subject
4	Credit value:	3(2-0-2)
5	Semester/ Year Offered:	1/2
6	Pre-requisite:	NA
7	Mode of delivery:	Lecture, Discussion
8	Assessment system and breakdown of marks:	Examination, Lab performance and report, Assignments
	Assignments	10%
	Practical	20%
	Examination	70%
9	Academic staff teaching unit:	Department of Electronic Engineering
10	Course outcome of unit: In this course students will be able ❖ To trace and correct the errors in C programs ❖ To write C statements/programs using relevant C syntax and structure ❖ To develop C programs for simple real-world applications ❖ To identify, formulate and solve problems using C programming language ❖ To write, run and debug C program codes using C compiler software	
11	Synopsis of unit: The course introduces students to the study of computer system and programming Language. Course covers the various structures and statements in C programming language. The course is designed to familiarize the student with C programming language. Technical programming is a comprehensive course in electronic engineering and can be applied in the field of industrial control, communication and any other various applications.	

	Topic: **Chapter Title** **2 Introduction to C programming** 2.1 Introduction 2.2 A simple C program: Printing a line of text 2.3 Another Simple C program: Adding two integers 2.4 Memory concepts 2.5 Arithmetic in C 2.6 Decision Making: Equality and Relational Operators **3 Structured program Development in C** 3.1 Introduction 3.2 Algorithms 3.3 Pseudocode 3.4 Control Structures 3.5 The if Selection Statement 3.6 The if…else Selection Statement 3.7 The while Repetition Statement 3.8 Formulating Algorithms Case Study 1: Counter-Controlled Repetition 3.9 Formulating Algorithms with TopDown, Stepwise Refinement Case Study 2: Sentinel-Controlled Repetition 3.10 Formulating Algorithms with Top-Down, Stepwise Refinement Case Study 3: Nested Control Structures 3.11 Assignment Operators 3.12Increment and Decrement Operators **4 Program Control** 4.1 Introduction 4.2 Repetition Essentials 4.3 Counter-Controlled Repetition 4.4 for Repetition Statement 4.5 for Statement: Notes and Observations 4.6 Examples Using the for Statement 4.7 switch Multiple-Selection Statement

	4.8 do…while Repetition Statement 4.9 break and continue Statements 4.10 Logical Operators 4.11 Confusing Equality (==) and Assignment (=) Operators 4.12Structured Programming Summary **5 C Functions** 5.1Introduction 5.2 Program Modules in C 5.3 Math Library Functions 5.4 Functions 5.5 Function Definitions 5.6 Function Prototypes 5.7 Function Call Stack and Activation Records 5.8 Headers 5.9 Calling Functions By Value and By Reference 5.10 Random Number Generation 5.11 Example: A Game of Chance 5.12 Storage Classes 5.13 Scope Rules 5.14 Recursion 5.15 Example Using Recursion: Fibonacci Series 5.16Recursion vs. Iteration
14	Main references: C How to Program, 6th Edition, Paul Deitel and Harvey Deitel, Prentice Hall.
15	Additional references: Sams Teach Yourself C in 21 Days, Bradley L. Jones and Peter Atiken, Sams Publishing

Information on Lab Practical

Lab	Activity
1	Topic : Simple input/output statements, arithmetic operators and decision making Outcomes: 1. To use simple input and output statements 2. To use arithmetic operators 3. To write simple decision-making statements 4. To identify the problem and solve it Resources: C Free compiler, PC
2	Topic : While Loop and Decision Making Outcomes: 1. To write the repetition structure using **while** loop 2. To write decision-making statements using **if** or **if else** 3. To identify the problem and solve it Resources: C Free compiler, PC
3	Topic : For Loop Outcomes: 1. To write the repetition structure using **for** loop 2. To identify the problem and solve it Resources: C Free compiler, PC
4	Topic : Switch Statements Outcomes: 1. To write the multiple selection process using **switch** statements 2. To identify the problem and solve it Resources: C Free compiler, PC
5	Topic : Functions Outcomes: 1. To write C programs using **functions** 2. To identify the problem and solve it Resources: C Free compiler, PC