COURSE HANDOUT

Part-A

PROGRAM :IB.Tech., I-Sem., CSEA
ACADEMIC YEAR : 2020-21
COURSE NAME & CODE : Differential Equations
L-T-P STRUCTURE : 3-2-0
COURSE CREDITS : 4
COURSE INSTRUCTOR : Dr. A. Rami Reddy
COURSE COORDINATOR : Dr. A. Rami Reddy
PRE-REQUISITES : None

COURSE EDUCATIONAL OBJECTIVES (CEOs): The objective of this course is to introduce the first order and higher order differential equations, functions of several variables. The students will also learn solving of first order partial differential equations.

COURSE OUTCOMES(COs)

After completion of the course, the student will be able to

CO1:Apply first order and first degree differential equations to find orthogonal trajectories.

CO2: Distinguish between the structure and methodology of solving higher order differential equations with constant coefficients.

CO3: Apply various Numerical methods to solve initial value problem.

CO4: Generate the infinite series for continuous functions and investigate the functional dependence.

CO5: Solve partial differential equations using Lagrange's method.

COURSE ARTICULATION MATRIX(Correlation between Cos&POs,PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	-	2	-	-	-	-	-	-	-	1
CO2	3	2	-	2	-	-	-	-	-	-	-	1
CO3	3	2	-	2	-	-	-	-	-	-	-	1
CO4	2	1	-	1	-	-	-	-	-	-	-	1
CO5	3	2	-	2	-	-	-	-	-	-	-	1

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight(Low), **2** –Moderate(Medium), **3** - Substantial (High).

BOS APPROVED TEXT BOOKS:

T1 Dr. B.S. Grewal, "Higher Engineering Mathematics", 42nd Edition, Khanna Publishers, New Delhi, 2012.

T2 Dr. B. V. Ramana, "Higher Engineering Mathematics", 1st Edition, TMH, New Delhi, 2010.

BOS APPROVED REFERENCE BOOKS:

R1 M. D. Greenberg, "*Advanced Engineering Mathematics*", 2nd Edition, TMH Publications, New Delhi,2011.

R2 Erwin Kreyszig, *"Advanced Engineering Mathematics"*, 8th Edition, John Wiley & sons, New Delhi,2011.

R3 W.E. Boyce and R. C. Diprima, " *Elementary Differential Equations"* , 7th Edition, John Wiley & sons, New Delhi,2011.

R4 S. S. Sastry, *" Introductory Methods of Numerical Analysis"* 5th Edition, PHI Learning Private Limited, New Delhi, 2012.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN):

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to the course, Course Outcomes	1	18/01/2021	18/01/2021	TLM1			

UNIT-I: Differential Equations of First Order and First Degree

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
2.	Introduction to UNIT I	1	19/01/2021		TLM2	CO1	T1,T2	
3.	Formation of Differential Equations	1	20/01/2021		TLM1	CO1	T1,T2	
4.	Exact DE	1	22/01/2021		TLM1	CO1	T1,T2	
5.	Non-exact DE Type I	1	23/01/2021		TLM1	CO1	T1,T2	
6.	Non-exact DE Type II	1	25/01/2021		TLM1	CO1	T1,T2	
7.	Non-exact DE Type III	1	27/01/2021		TLM1	CO1	T1,T2	
8.	**TUTORIAL 1**	1	29/01/2021		TLM3	CO1	T1,T2	
9.	Non-exact DE Type IV	1	30/01/2021		TLM1	CO1	T1,T2	
10.	Orthogonal Trajectories (Cartesian)	1	01/02/2021		TLM1	CO1	T1,T2	
11.	Orthogonal Trajectories (polar)	1	02/02/2021		TLM1	CO1	T1,T2	
12.	Orthogonal Trajectories (polar)	1	03/02/2021		TLM1	CO1	T1,T2	
13.	Problems	1	05/02/2021		TLM1	CO1	T1,T2	
14.	**TUTORIAL 2**	1	06/02/2021		TLM3	CO1	T1,T2	
No. of classes required to complete UNIT-I		13			No. of classes taken:			

UNIT-II: Higher Order Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Introduction to UNIT II	1	08/02/2021		TLM2	CO2	T1,T2	
16.	Solving a homogeneous DE	1	09/02/2021		TLM1	CO2	T1,T2	
17.	Finding Particular Integral, P.I for e^{ax+b}	1	10/02/2021		TLM1	CO2	T1,T2	
18.	P.I for Cosbx, or sinbx	1	12/02/2021		TLM1	CO2	T1,T2	
19.	P.I for polynomial function	1	13/02/2021		TLM1	CO2	T1,T2	
20.	P.I for $e^{ax+b}v(x)$	1	15/02/2021		TLM1	CO2	T1,T2	
21.	P.I for $e^{ax+b}v(x)$	1	17/02/2021		TLM1	CO2	T1,T2	
22.	P.I for $x^k v(x)$	1	19/02/2021		TLM1	CO2	T1,T2	
23.	Method of Variation of parameters	1	20/02/2021		TLM1	CO2	T1,T2	
24.	**TUTORIAL 3**	1	22/02/2021		TLM3	CO2	T1,T2	

25.	Method of Variation of parameters	1	23/02/2021		TLM1	CO2	T1,T2	
26.	**TUTORIAL 4**	1	24/02/2021		TLM3	CO2	T1,T2	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III: Numerical solution of Ordinary Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
27.	Introduction to Unit-III	1	26/02/2021		TLM2	CO3	T1,T2	
28.	Solution by Taylor's series	1	27/02/2021		TLM1	CO3	T1,T2	
29.	Solution by Taylor's series	1	01/03/2021		TLM1	CO3	T1,T2	
30.	Picard's Method	1	02/03/2021		TLM1	CO3	T1,T2	
31.	Picard's Method	1	03/03/2021		TLM1	CO3	T1,T2	
I MID EXAMINATIONS (08-03-2021 TO 15-03-2021)								
32.	Euler's Method	1	15/03/2021		TLM1	CO3	T1,T2	
33.	Modified Euler's Method	1	16/03/2021		TLM1	CO3	T1,T2	
34.	Runge- Kutta Method	1	17/03/2021		TLM1	CO3	T1,T2	
35.	**TUTORIAL 6**	1	19/03/2021		TLM3	CO3	T1,T2	
No. of classes required to complete UNIT-III		9			No. of classes taken:			

UNIT-IV: Functions of Several Variables

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
36.	Introduction to UNIT IV	1	22/03/2021		TLM1	CO4	T1,T2	
37.	Generalized Mean Value Theorem, Taylor's series	1	23/03/2021		TLM1	CO4	T1,T2	
38.	Maclaurin's series	1	24/03/2021		TLM1	CO4	T1,T2	
39.	Functions of several variables	1	27/03/2021		TLM1	CO4	T1,T2	
40.	Jacobians (polar, cylindrical, spherical coordinates)	1	30/03/2021		TLM1	CO4	T1,T2	
41.	Functional dependence	1	31/03/2021		TLM1	CO4	T1,T2	
42.	**TUTORIAL 7**	1	03/04/2021		TLM3	CO4	T1,T2	
43.	Maxima and Minima of functions of two variables	1	05/04/2021		TLM1	CO4	T1,T2	
44.	Maxima and Minima of functions of two variables	1	06/04/2021		TLM1	CO4	T1,T2	
45.	**TUTORIAL 8**	1	09/04/2021		TLM3	CO4	T1,T2	
No. of classes required to complete UNIT-IV		10			No. of classes taken:			

UNIT-V: Partial Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
46.	Introduction to UNIT V	1	10/04/2021		TLM1	CO5	T1,T2	
47.	Formation of PDE by	1	12/04/2021		TLM1	CO5	T1,T2	

	elimination of arbitrary constants							
48.	Formation of PDE by elimination of arbitrary functions	1	16/04/2021		TLM1	CO5	T1,T2	
49.	Formation of PDE by elimination of arbitrary functions	1	17/04/2021		TLM1	CO5	T1,T2	
50.	**TUTORIAL 9**	1	19/04/2021		TLM3	CO5	T1,T2	
51.	Solving of PDE	1	20/04/2021		TLM1	CO5	T1,T2	
52.	Lagrange's Method	1	23/04/2021		TLM1	CO5	T1,T2	
53.	Lagrange's Method	1	24/04/2021		TLM1	CO5	T1,T2	
54.	**TUTORIAL 10**	1	24/04/2021		TLM1	CO5	T1,T2	
No. of classes required to complete UNIT-V		9			No. of classes taken:			

Contents beyond the Syllabus

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
55.	Solving of PDE other methods	1	24/04/2021		TLM5	CO5	T1,T2	
No. of classes		1			No. of classes taken:			
II MID EXAMINATIONS (26-04-2021 TO 30-04-2021)								

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM2	PPT	**TLM6**	Assignment or Quiz
TLM3	Tutorial	**TLM7**	Group Discussion/Project
TLM4	Demonstration (Lab/Field Visit)		

Part - C

EVALUATION PROCESS:

Evaluation Task	**Units**	**Marks**
Assignment– 1	1	A1=5
Assignment– 2	2	A2=5
I-Mid Examination	1,2,3.5	B1=18
Objective Questions-1	1,2,3.5	C1=7
Assignment– 3	3	A3=5
Assignment– 4	4	A4=5
Assignment– 5	5	A5=5
II-Mid Examination	3,4,5	B2=18
Online Quiz-2	3,4,5	C2=7
Evaluation of Assignment: A=Avg(Best of Four(A1,A2,A3,A4,A5))	1,2,3,4,5	A=5
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=18
Evaluation of Objective Questions Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4,5	C=7
Cumulative Internal Examination : A+B+C	**1,2,3,4,5**	**30**
Semester End Examinations : D	**1,2,3,4,5**	**70**
Total Marks: A+B+C+D	**1,2,3,4,5**	**100**

Dr. A. Rami Reddy	**Dr.A. RAMI REDDY**	**Dr.A.RAMI REDDY**	**Dr.A.RAMI REDDY**
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKKIREDDY BALI REDDY COLLEGE OF ENGINEERING
DEPARTMENT OFCOMPUTER SCIENCE AND ENGINEERING
(Autonomous &Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi,
NAAC Accredited with 'A' grade, Accredited by NBA, Certified by ISO 9001:2015)
L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

PROGRAM **:** B.Tech., I-Sem., A/S CSE

ACADEMIC YEAR **:** 2019-20

COURSE NAME & CODE **:** Programming for Problem Solving Using C–20CS01

L-T-P STRUCTURE **:** 5-0-0

COURSE CREDITS **:** 3

COURSE INSTRUCTOR **: Dr. D. Jagan Mohan Rddy**

COURSE COORDINATOR **: Dr. D. Jagan Mohan Rddy**

COURSE OBJECTIVE:

In this course student will learn about the basic elements of C programming like data types, expressions, control statements, various I/O functions and to solve simple mathematical problems using control structures. The derived data types like arrays, strings, various operations on them. Modular programming using functions and Memory management using pointers. User defined structures and various operations on it. The basics of files and its I/O operations.

COURSE OUTCOMES (COS): At the end of the course, the student will be able to :

CO1: Familiar with syntax and semantics of the basic programming language constructs
CO2: Construct derived data types like arrays in solving problem.
CO3: Decompose a problem into modules and reconstruct it using various ways of user defined functions.
CO4: Define user-defined data types like structures and unions and its applications to solve Problems.
CO5: Discuss various file I/O operations and its application.

COURSE ARTICULATION MATRIX(Correlation between COs&POs,PSOs**):**

COs	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PSO 1**	**PSO 2**	**PSO 3**
CO1	2	3											3		1
CO2	2	3											3		1
CO3	2	3	2										3		1
CO4	2	3	2										3		1
CO5	2	3	2										3	1	

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight(Low), **2 -** Moderate(Medium), **3 -** Substantial (High).

BOS APPROVED TEXT BOOKS:

1. ReemaThareja, Programming in C, Oxford University Press, 2nd Edition, 2015
Reference books:
1. Jeri R.Hanly, Elliot B.Koffman, Problem Solving and Program Design in C, Pearson Publishers, 7th Edition, 2013
2. E Balagurusamy, Computer Programming, McGraw Hill Education, 8th Edition.
3. C: The Complete Reference, McGraw Hall Education,4th Edition.
4. PradeepDey, Manas Ghosh, Programming in C, Oxford University Press, 2nd Edition, 2011.
5. Stephen G.Kochan, Programming in C, Pearson Education, 3rd Edition, 2005.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I : Introduction to Problem solving through C-Programming, C-Programming Basics

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
56.	Fundamentals of Computers	1	11/01/2021		**TLM2**	CO1		
57.	Problem Solving through C-Programming (Problem Specification)	1	12/01/2021		**TLM4**	CO1		
58.	Algorithm/pseudo code, Flow charts with Examples	1	18/01/2021		**TLM4**	CO1		
59.	Introduction to c language - Structure of C Program	1	19/01/2021		**TLM1**	CO1		
60.	Identifiers, basic data types, Variables and Constants	1	20/01/2021		**TLM1**	CO1		
61.	Input-Output statements	1	21/01/2021		**TLM1**	CO1		
62.	A Simple C Program	1	25/01/2021		**TLM1**	CO1		
63.	Operators and Expressions	1	27/01/2021		**TLM1**	CO1		
64.	Expression Evaluation	1	28/01/2021		**TLM1**	CO1		
65.	Type Conversions - Examples	1	30/01/2021		**TLM1**	CO1		
66.	Conditional Statements: If, If-Else	1	01/02/2021		**TLM1**	CO1		
67.	Conditional Statements: Else-If Ladder, Nestled If	1	02/02/2021		**TLM1**	CO1		
68.	Conditional Statements: Switch statements, Break, Goto	1	03/02/2021		**TLM1**	CO1		
69.	Loops: While statement	1	04/02/2021		**TLM1**	CO1		
70.	Loops: Do-While statement	1	08/02/2021		**TLM1**	CO1		
71.	Loops: For statement, Continue	1	10/02/2021		**TLM1**	CO1		
72.	Example Programs	1	11/02/2021		**TLM3**	CO1		
No. of classes required to complete UNIT-I		17			No. of classes taken:			

UNIT-II : Array and Strings

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	One-Dimensional Array: Declaration, Initialization, Assignment	1	15-02-2021		**TLM2**	CO2		
2.	One-Dimensional Array: Accessing Elements	2	16-02-2021		**TLM1**	CO2		
3.	Two- dimensional arrays, Accessing elements	2	17-02-2021		**TLM1**	CO2		
4.	Multi-dimensional arrays, applications of arrays.	1	18-02-2021		**TLM1**	CO2		
5.	Strings: Declaration, Initialization, Accessing	2	22-02-2021		**TLM1**	CO2		
6.	String Handling Functions	2	23-02-2021		**TLM1**	CO2		
7.	Linear Search & Binary Search	1	24-02-2021		**TLM 1**	CO2		
8.	Bubble Sort	1	25-02-2021		**TLM 1**	CO2		
9.	Pre Processor Dircetives	1	01-03-2021		**TLM3**	CO2		
No. of classes required to complete UNIT-II		9			No. of classes taken:			

UNIT-III : Functions and Pointers

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Pointers: Declaration and initialization of pointer variables	1	02-03-2021		**TLM2**	CO3		
2.	Pointer Expressions, Address Arithmetic	1	03-03-2021		**TLM1**	CO3		
3.	Pointers and Arrays	1	08-03-2021		**TLM1**	CO3		
4.	Pointer and Strings	1	09-03-2021		**TLM1**	CO3		
5.	Pointer to Pointer, Pre-Processor Directives and Macros	1	15-03-2021		**TLM1**	CO3		
6.	Tutorial	1	16-03-2021		**TLM3**	CO3		
7.	Functions: Basics, categories of Functions	1	17-03-2021		**TLM2**	CO3		
8.	Parameter Passing Techniques	1	18-03-2021		**TLM1**	CO3		
9.	Arrays as Parameters, Strings as Parameters and Pointers as Parameters	1	22-03-2021		**TLM1**	CO3		
10.	Recursive Functions - Comparison with Iteration	1	23-03-2021		**TLM1**	CO3		
11.	Storage Classes	1	24-03-2021		**TLM1**	CO3		
12.	Dynamic Memory Management Functions	1	26-03-2021		**TLM1**	CO3		
13.	Command Line Arguments	1	30-03-202		**TLM1**	CO3		
14.	Programs	1	31-03-2021		**TLM3**	CO3		

No. of classes required to complete UNIT-III	14			No. of classes taken:

UNIT-IV : Derived Types

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Structures	1	01-04-2021		**TLM2**	CO4		
2.	Arrays of Structures	1	06-04-2021		**TLM1**	CO4		
3.	Structures and Functions	1	07-04-2021		**TLM1**	CO4		
4.	Pointers to structures	1	12-04-2021		**TLM1**	CO4		
5.	Self-referential structures	1	15-04-2021		**TLM1**	CO4		
6.	Unions& Typedef	1	19-04-2021		**TLM1**	CO4		
No. of classes required to complete UNIT-IV		06			No. of classes taken:			

UNIT-V : Files

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	File Concept, text files, reading & writing	1	20-04-201		**TLM2**	CO5		
2.	binary files, modes of operation	1	22-04-2021		**TLM1**	CO5		
3.	Standard I/O operations	1	26-04-2021		**TLM1**	CO5		
4.	Formatted I/O operations	1	27-04-2021		**TLM1**	CO5		
5.	File I/O operations	1	28-04-2021		**TLM1**	CO5		
6.	Error handling functions	1	29-04-2021		**TLM2**	CO5		
No. of classes required to complete UNIT-V		06			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
73.	Enum data type	1			**TLM4**			
74.	Types of Recursion	1			**TLM4**			

Teaching Learning Methods					
TLM1	Chalk and Talk	**TLM4**	Problem Solving	**TLM7**	Seminars or GD
TLM2	PPT	**TLM5**	Programming	**TLM8**	Lab Demo
TLM3	Tutorial	**TLM6**	Assignment and Quiz	**TLM9**	Case Study

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	11-01-2021	06-03-2021	8
I Mid Examinations	08-03-2021	13-03-2021	1
II Phase of Instructions	15-03-2021	01-05-2021	7
II Mid Examinations	26-04-2021	04-01-2021	1

Preparation and Practical's	03-05-2021	08-05-2021	1
Semester End Examinations	10-03-2021	22-05-2021	2

EVALUATION PROCESS:

Evaluation Task	**Units**	**Marks**
Assignment– 1	1	A1=5
Assignment– 2	2	A2=5
I-Mid Examination	1,2,3.5	B1=18
Objective Questions-1	1,2,3.5	C1=7
Assignment– 3	3	A3=5
Assignment– 4	4	A4=5
Assignment– 5	5	A5=5
II-Mid Examination	3,4,5	B2=18
Online Quiz-2	3,4,5	C2=7
Evaluation of Assignment: A=Avg (Best of Four(A1,A2,A3,A4,A5))	1,2,3,4,5	A=5
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=18
Evaluation of Objective Questions Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4,5	C=7
Cumulative Internal Examination : A+B+C	**1,2,3,4,5**	**30**
Semester End Examinations : D	**1,2,3,4,5**	**70**
Total Marks: A+B+C+D	**1,2,3,4,5**	**100**

Title	**Course Instructor**	**Course Coordinator**	**Module Coordinator**	**Head of the Department**
Name of the Faculty	Dr. D.Jagan Mohan Reddy	Dr. D.Jagan Mohan Reddy	Dr. D.Jagan Mohan Reddy	Dr. D. Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME)
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE HANDOUT

Part - A

PROGRAM : B.Tech., I-Sem., CSE – A section

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : Basic Electrical and Electronics Engineering

L-T-P STRUCTURE : 3-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR :**Mr. P.SRIHARI**

COURSE COORDINATOR : Mr. J.V.PAVAN CHAND

COURSE EDUCATIONAL OBJECTIVES (CEOs):

This course enables student to illustrate the basics of applied electricity and electronics.

COURSE OUTCOMES (COs)

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

CO1: Apply network reduction techniques to simplify electrical circuits
CO2: Illustrate the working principle of DC machines and transformers
CO3: Understand V-I characteristics of semiconductor devices.
CO4: Illustrate the configuration of Transistors and their applications

BOS APPROVED TEXT BOOKS:

T1. A.Sudhakar and Shyammohan S Palli,Electrical Circuits, Tata McGraw-Hill, 3rd Edition.

T2. M.S.Sukhija, T.K.Nagsarkar, "Basic Electrical and Electronics Engineering", Oxford University Press, 2016 Edition.

BOS APPROVED REFERENCE BOOKS:

R1: Kothari and Nagarath, "Basic Electrical Engineering", TMH Publications, 3rd Edition.2013

R2: G.S.N.Raju, "Electronic Devices and Circuits", I.K.International.2006

Part - B
COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I : ELECTRICAL CIRCUIT FUNDAMENTALS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction	1	11-01-2021		TLM1	
2.	Basic definitions	1	18-01-2021		TLM1	
3.	Types of elements	1	20-01-2021		TLM1	
4.	R,L,C parameters	1	21-01-2021		TLM1	
5.	Ohm's Law, Kirchhoff's Laws	1	22-01-2021		TLM1	
6.	Series & parallel Star to delta, Delta to star	1	23-01-2021		TLM1	
7.	Source transformations	1	25-01-2021		TLM1	
8.	Mesh Analysis	1	27-01-2021		TLM1	
9.	Nodal Analysis	1	28-01-2021		TLM2	
10.	Assignment/Quiz-I	1	29-01-2021		TLM6	
11.	Problems	1	30-01-2021			
12.	Problems	1	01-02-2021			
No. of classes required to complete UNIT-I		12				

UNIT-II : AC FUNDAMENTALS and NETWORK THEOREMS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
13.	Superposition Theorem	1	03-02-2021		TLM1	
14.	Thevenin's Theorem	1	04-02-2021		TLM1	
15.	Norton's Theorem	1	05-02-2021		TLM1	
16.	Maximum Power Transfer Theorem	1	06-02-2021		TLM1	
17.	Peak, R.M.S, average and instantaneous values	1	08-02-2021		TLM1	
18.	Form factor and Peak factor for periodic waveforms Phase and Phase difference	1	10-02-2021		TLM1	
19.	Reactance, Impedance, Susceptance and Admittance	1	11-02-2021		TLM1	
20.	Real, Reactive and apparent Powers, Powerfactor	1	12-02-2021		TLM1	
21.	Resonance	1	13-02-2021		TLM2	
22.	Band Width & Quality Factor	1	15-02-2021		TLM1	
23.	Problems	1	17-02-2021		TLM1	
24.	Assignment/Quiz-II	1	18-02-2021		TLM6	
25.	MID-I		08-03-2021			

26.	MID-I		10-03-2021			
27.	MID-I		12-03-2021			
28.	MID-I		13-03-2021			
No. of classes required to complete UNIT-II		12				

UNIT-III : DC Machine Fundamentals and Single Phase Transformers

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
29.	Introduction to Electrical Machine	1	19-02-2021		TLM1	
30.	DC generator principle	1	20-02-2021		TLM1	
31.	constructional details	1	22-02-2021		TLM1	
32.	EMF equation	1	24-02-2021		TLM1	
33.	types of generators	1	25-02-2021		TLM1	
34.	DC motor principle, Back emf	1	26-02-2021		TLM1	
35.	types of motors motor applications	1	27-02-2021		TLM1	
36.	Principle of operation of single phase transformers	1	01-03-2021		TLM1	
37.	Construction of single phase transformers	1	03-03-2021		TLM1	
38.	EMF equation of Transformer	1	04-03-2021		TLM2	
39.	Assignment/Quiz-III	1	05-03-2021		TLM6	
40.	Problems		06-03-2021		TLM1	
41.	Problems		15-03-2021		TLM1	
No. of classes required to complete UNIT-III						

UNIT-IV : P-N Junction Diode and Zener Diode

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
42.	Introduction to Electronic Devices	1	17-03-2021		TLM1	
43.	Operation of PN junction diode	1	18-03-2021		TLM1	
44.	V-I characteristics of PN junction diode	1	19-03-2021		TLM1	
45.	Half Wave Rectifier	1	20-03-2021		TLM1	
46.	Full Wave Rectifier-Bridge type	1	22-03-2021		TLM1	
47.	Operation of Zener	1	24-03-2021		TLM1	

	Diode					
48.	V-I characteristics of Zener Diode	1	25-03-2021		TLM1	
49.	Zener Diode as Voltage Regulator	1	26-03-2021		TLM2	
50.	Problems	1	27-03-2021		TLM1	
51.	Problems	1	31-03-2021		TLM1	
52.	Problems	1	01-04-2021		TLM1	
53.	Assignment/Quiz-4	1	03-04-2021		TLM6	
No. of classes required to complete UNIT-IV						

UNIT-V: Transistors

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
54.	Introduction and symbol of Transistor	1	07-04-2021		TLM1	
55.	Introduction and symbol of Transistor	1	08-04-2021		TLM1	
56.	Principle, Operation and Construction - Transistor	1	09-04-2021		TLM1	
57.	CB configuration	1	10-04-2021		TLM1	
58.	CB, CE configuration	1	12-04-2021		TLM1	
59.	CE configuration	1	15-04-2021		TLM1	
60.	JFET	1	16-04-2021		TLM1	
61.	JFET	1	17-04-2021		TLM1	
62.	MOSFET	1	19-04-2021		TLM1	
63.	Application of transistor as an amplifier	1	22-04-2021		TLM2	
64.	Assignment/Quiz-4	1	23-04-2021		TLM6	
65.	MID-II		26-04-2021			
66.	MID-II		28-04-2021			
67.	MID-II		29-04-2021			
68.	MID-II		30-04-2021			
69.	MID-II		01-05-2021			
No. of classes required to complete UNIT-V						

CONTENT BEYOND SYLLABUS:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods
1		1	24-04-2021		TLM2

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM2	PPT	**TLM6**	Assignment or Quiz
TLM3	Tutorial	**TLM7**	Group Discussion/Project
TLM4	Demonstration (Lab/Field Visit)		

Part - C

EVALUATION PROCESS:

Evaluation Task	COs	Marks
Assignment-1	1	A1=5
Assignment – 2	1	A2=5
I-Mid Examination	1	B1=36
Online-I	1	C1=14
Assignment – 3	2	A3=5
Assignment – 4	3	A4=5
Assignment – 5	4	A5=5
II-Mid Examination	2,3,4	B2=36
Online-II	2,3,4	C2=14
Evaluation of Assignment/Quiz Marks: A=(A1+A2+A3+A4+A5)/5	1,2,3,4	A=5
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4	B=
Evaluation of Online Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4	C=
Attendance	--	D=
Cumulative Internal Examination : A+B+C+D	**1,2,3,4**	
Semester End Examinations	**1,2,3,4**	**E=**
Total Marks: A+B+C+D+E	**1,2,3,4**	**100**

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1. Design and develop innovative products and services in the field of Electrical and Electronics Engineering and allied engineering disciplines.

PEO2. Apply the knowledge of Electrical and Electronics Engineering to solve problems of social relevance, pursue higher education and research.

PEO3. Work effectively as individuals and as team members in multidisciplinary projects.

PEO4. Engage in lifelong learning, career enhancement and adapt to changing professional and societal needs.

PROGRAMME OUTCOMES (POs)

a: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

b: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

c: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

d: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

e: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modernengineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

f: The engineer and society: Apply reasoning informed by the contextual knowledge to assesssocietal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

g: Environment and sustainability: Understand the impact of the professional engineering solutionsin societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

h: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

i: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

j: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

k: Project management and finance: Demonstrate knowledge and understanding of the ring and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

l: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PSOs (Program specific Outcomes):

PSO-a: Specify, design and analyze systems that efficiently generate, transmit and distribute electrical power

PSO-b: Design and analyze electrical machines, modern drive and lighting systems

PSO-c: Specify, design, implement and test analog and embedded signal processing electronic systems

PSO-d: Design controllers for electrical and electronic systems to improve their performance.

Mr. P.SRIHARI	Mr.J.V.PAVAN CHAND	Dr.G.NAGESWARA RAO	Dr.J.SIVA VARA PRASAD
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME)
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

FRESHMAN ENGINEERING DEPARTMENT

COURSE HANDOUT

PART-A

PROGRAM	**: B.Tech., I-Sem., CSE-A**
ACADEMIC YEAR	**: 2020-21**
COURSE NAME & CODE	**: APPLIED PHYSICS & 20FE07**
L-T-P STRUCTURE	**: 4-1-0**
COURSE CREDITS	**: 3**
COURSE INSTRUCTOR	**: P VIJAYA SIRISHA**
PRE-REQUISITE	**: Nil**

COURSE EDUCATIONAL OBJECTIVES (CEOs): It enables the students to understand the fundamental concepts ofoptics, quantum mechanics, free electron theory of metals, semiconductors, dielectrics, and their applications.

COURSE OUTCOMES (COs): At the end of this course, the student will be able to

CO 1	**Define** the nature of Interference and Diffraction.
CO 2	**Apply** the Lasers and Optical Fibers in different fields.
CO 3	**Estimate** the electrical conductivity of metals.
CO 4	**Analyze** the properties of Semiconducting materials.
CO5	**Classify** the different types of Magnetic and Dielectric materials.

COURSE ARTICULATION MATRIX (Correlation between COs, POs & PSOs):

APPLIED PHYSICS												
COURSE DESIGNED BY	**FRESHMAN ENGINEERING DEPARTMENT**											
Course Outcomes	**Programme Outcomes**											
PO's →	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO1.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO2.	**3**	**3**	**2**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO3.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO4.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO5.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
1 = slight (Low) **2 = Moderate (Medium)** **3 = Substantial (High)**												

BOS APPROVED TEXT BOOKS:

T1 : V. Rajendran, "*Engineering Physics*", TMH, New Delhi, 6th Edition, 2014.
T2 :M.N. Avadhanulu, P.G. Kshirsagar, "Engineering *Physics*", S. Chand &Co., 2nd Edition, 2014.

BOS APPROVED REFERENCE BOOKS:

R1: M.N. Avadhanulu, TVS Arun Murthy, "Applied *Physics*", S. Chand & Co., 2nd Edition, 2007.
R2 :P.K. Palani Samy, "*Applied Physics*", Sci. Publ. Chennai, 4th Edition, 2016.
R3 :P. Sreenivasa Rao, K Muralidhar, "*Applied Physics*", Him. Publi. Mumbai,1st Edition, 2016.
R4 :Hitendra K Mallik , AK Singh " *Engineering Physics*", TMH, New Delhi, 1st Edition, 2009.

WEB REFERENCES AND E-TEXT BOOKS

1. http://www.freebookcentre.net/Physics/Solid-State-Physics-Books.html
2. http://physicsdatabase.com/free-physics-books/
3. http://www.e-booksdirectory.com
4. http://www.thphys.physics.ox.ac.uk

TEACHING LEARNING METHODS			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: INTERFERENCE & DIFFRACTION

Course Outcome :- CO 1; Text Book :- T1, R2

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
75.	Introduction to the Subject, Course Outcomes	1	11/01/2021		**TLM2**		
76.	General Properties of Light	1	18/01/2021		**TLM5**		
77.	General Properties of matter	1	19/01/2021		**TLM2**		
78.	Recapitulation of Basic Concepts of Physics	1	21/01/2021		**TLM6**		
79.	Superposition of	1	22/01/2021		**TLM6**		

	waves, Coherence, Conditions for Interference						
80.	Interference from thin films	1	23/01/2021		**TLM1**		
81.	Newton's rings	1	25/01/2021		**TLM4**		
82.	TUTORIAL-1	1	28/01/2021		**TLM3**		
83.	Michelson's interferometer	1	29/01/2021		**TLM2**		
84.	Problems &Assignment/Quiz	1	30/01/2021		**TLM1**		
85.	Introduction – Diffraction, Types	1	30/01/2021		**TLM2**		
86.	Single slit diffraction	1	01/02/2021		**TLM4**		
87.	Diffraction – Circular aperture, Diffraction grating	1	02/02/2021		**TLM4**		
88.	TUTORIAL-2	1	04/02/2021		**TLM3**		
89.	Resolving power of Grating	1	05/02/2021		**TLM1**		
90.	Problems &Assignment/Quiz	1	06/02/2021		**TLM1**		
No. of classes required to complete UNIT-I: 12				No. of classes taken:			

UNIT-II: LASERS & OPTICAL FIBERS

Course Outcome :- CO 2; Text Book :- T1, R2

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Principle of laser, Absorption, Spontaneous and Stimulated emission	1	08/02/2021		**TLM2**		
2.	Einstein Coefficients	1	09/02/2021		**TLM1**		
3.	TUTORIAL-3	1	11/02/2021		**TLM3**		
4.	Nd-YAG Laser, He-Ne gas Laser	1	12/02/2021		**TLM2**		
5.	Applications of LASERS	1	13/02/2021		**TLM5**		
6.	Optical Fiber	1	15/02/2021		**TLM2**		

	principle, Structure of optical fiber						
7.	Numerical aperture and Acceptance angle	1	16/02/2021		**TLM4**		
8.	TUTORIAL-4	1	18/02/2021		**TLM3**		
9.	Types of optical fibers	1	19/02/2021		**TLM2**		
10.	Applications	1	20/02/2021		**TLM5**		
11.	Problems &Assignment/Quiz	1	22/02/2021		**TLM1**		
No. of classes required to complete UNIT-II: 11				No. of classes taken:			

UNIT-III: PRICIPLES OF QUANTUM MECHANICS & FREE ELECTRON THEORY

Course Outcome :- CO 3; Text Book :- T1, R2

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Introduction quantum mechanics,De Broglie hypothesis	1	23/02/2021		**TLM5**		
2.	TUTORIAL-5	1	25/02/2021		**TLM3**		
3.	Davisson and Germer Experiment, Physical significance of wave function	1	26/02/2021		**TLM2**		
4.	Schrodinger time dependent & independent wave equations	1	27/02/2021		**TLM1**		
5.	Particle in a box	1	01/03/2021		**TLM1**		
6.	Problems &Assignment/Quiz	1	02/03/2021		**TLM1**		
7.	Preparation for MID-1	1	04/03/2021		---		
8.	TUTORIAL-6	1	05/03/2021		**TLM3**		
9.	Preparation for MID-1		06/03/2021		---		
10.	MID-1 Exams	---	08/03/2021		---		
11.	MID-1 Exams	---	09/03/2021		---		
12.	MID-1 Exams	---	12/03/2021		---		
13.	MID-1 Exams	---	13/03/2021		---		
14.	MID-1 Exams	---	15/03/2021		---		
15.	Classical free electron theory-	1	16/03/2021		**TLM2**		

	postulates, Success & Failures						
16.	Expression for electrical conductivity and drift velocity	1	18/03/2021		**TLM3**		
17.	Fermi-Dirac distribution function- Temperature dependence	1	19/03/2021		**TLM2**		
18.	Classification of Solids on the basis of Band theory	1	20/03/2021		**TLM6**		
19.	Problems &Assignment/Quiz	1	22/03/2021		**TLM1**		
No. of classes required to complete UNIT-III: 11				No. of classes taken:			

UNIT-IV :SEMICONDUCTOR PHYSICS

Course Outcome :- CO 4; Text Book :- T2, R1

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Introduction - Classification of semiconductors	1	23/03/2021		**TLM6**		
2.	TUTORIAL-7	1	25/03/2021		**TLM3**		
3.	Conductivity of Intrinsic and Extrinsic semiconductors	1	26/03/2021		**TLM1**		
4.	Drift and Diffusion Current, Einstein relation	1	27/03/2021		**TLM1**		
5.	Hall Effect and Hall Coefficient	1	30/03/2021		**TLM5**		
6.	Direct band gap and indirect band gap semiconductors	1	01/03/2021		**TLM2**		
7.	TUTORIAL-8	1	03/04/2021		**TLM3**		
8.	Solar Cell, Applications	1	03/04/2021		**TLM4**		
9.	Problems &Assignment/Quiz	1	06/04/2021		**TLM1**		
No. of classes required to complete UNIT-IV: 09				No. of classes taken:			

UNIT-V :MAGNETIC & DIELECTRIC MATERIALS

Course Outcome :- CO 5; Text Book :- T2, R1

S.No	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Introduction,Magnetic parameters	1	08/04/2021		**TLM2**		
2.	Classification of magnetic materials – Dia, para & Ferro	1	09/04/2021		**TLM6**		
3.	TUTORIAL-9	1	10/04/2021		**TLM3**		
4.	Hysteresis loop, soft and hard magnetic materials	1	12/04/2021		**TLM2**		
5.	Applications of magnetic materials	1	15/04/2021		**TLM2**		
6.	Basic Definitions, Electronic polarization	1	16/04/2021		**TLM1**		
7.	Ionic & Orientation polarization	1	17/04/2021		**TLM1**		
8.	TUTORIAL-10	1	19/04/2021		**TLM3**		
9.	Local field, Clausius Mosotti equation	1	20/04/2021		**TLM1**		
10.	Applications of dielectricmaterials	1	22/04/2021		**TLM2**		
11.	Problems & Assignment/Quiz	1	23/04/2021		**TLM1**		
12.	MID-2 Exams	---	24/04/2021		---		
13.	MID-2 Exams	---	26/04/2021		---		
14.	MID-2 Exams	---	27/04/2021		---		
15.	MID-2 Exams	---	29/04/2021		---		
16.	MID-2 Exams	---	30/04/2021		---		
No. of classes required to complete UNIT-V: 11				No. of classes taken:			

PART-C

EVALUATION PROCESS (R-20 Regulation):

Evaluation Task	Marks
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
Assignment-III (Unit-III (A))	A3=5
I-Mid Examination (Units-I, II& III (A))	M-1=18
I-Quiz Examination (Units-I, II& III (A))	Q1=07
Assignment-III (Unit-III (B))	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5

II-Mid Examination (Units-III (B), IV & V)	M-2=18
II-Quiz Examination (Units-III (B), IV & V)	Q2=07
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M-1,M-2)+25% of Min(M-1,M-2)	M=18
Quiz Marks =75% of Max(Q-1,Q-2)+25% of Min(Q-1,Q-2)	Q=07
Cumulative Internal Examination (CIE): A+M+Q	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	**100**

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a

	member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Instructor	Course Coordinator	Module Coordinator	HOD
P Vijaya Sirisha	Dr. S. Yusub	Dr. S. Yusub	Dr. A. Rami Reddy

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
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L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.
Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor: Ms. K. SRIDEVI
Course Name & Code **:**PC-I, 20FE01
L-T-P Structure **: 2-0-0** **Credits:**02
Program/Sem/Sec : CSE-A –I SEM
A.Y. **:**2020-21

PREREQUISITE: NIL

COURSE EDUCATIONAL OBJECTIVES (CEOs): To improve English language proficiency of the students on various aspects like vocabulary, grammar, communication skills, listening skills, Reading &Writingskills.

COURSE OUTCOMES (COs): At the end of the course, student will be able to

CO1	Write sentences and paragraphs using proper grammatical structures and word forms.	L1
CO2	Comprehendthegiventextbyemployingsuitablestrategiesforskimmingand Scanning and draw in ferences	L2
CO3	Write summaries of reading texts using correct tense forms& Appropriate structures.	L1
CO4	Write Formal Letters; Memos & E-Mails	L3
CO5	Editthesentences/shorttextsbyidentifyingbasicerrorsofgrammar/ vocabulary/syntax	L2

Unit-I

Exploration - 'A Proposal to Girdle the Earth – Nellie Bly'; Reading: Skimming for main idea;Scanning for specific information; Grammar & Vocabulary: Content Words; Function Words;Word Forms: verbs, nouns, adjectives and adverbs; Nouns: Countable and Uncountable, Singularand Plural forms; Wh - Questions; Word Order in Sentences; Writing: Paragraph Analysis;ParagraphWriting;PunctuationandCapitalLetters

Unit–II

On Campus- 'The District School as it Was by One Who Went to it – Warren Burton'; Reading:IdentifyingSequenceofIdeas;

Grammar&Vocabulary:CohesiveDevices:Linkers/signposts/Transition signals,Synonyms,MeaningsofWords/Phrasesin thecontext;Writing:MemoDrafting.

Unit–III

WorkingTogether-'The FutureofWork'

Reading: Making basic inferences; Strategies to use text clues for comprehension; Summarizing;Grammar & Vocabulary:Verbs: Tenses; Reporting Verbs for Academic Purpose; Writing**:**Rephrasingwhatisread;AvoidingredundanciesandrepetitionsAbstract Writing/Summarizing.

Unit–IV

'A.P.J.AbdulKalam'; Grammar & Vocabulary: Direct & Indirect Speech; articles and theirOmission;Writing:E-MailDrafting.

Unit–V

'C.V.Raman';Grammar&Vocabulary:Subject-verbAgreement;Prepositions;Writing:FormalLetterWriting.

COURSE ARTICULATION MATRIX (Correlation between COs, POs & PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		1		1		1			3	3		2			
CO2		1		1		1			3	3		2			
CO3		1		1		1			3	3		2			
CO4		1		1		1			3	3		2			
CO5		1		1		1			3	3		2			
1 - Low						**2** –Medium						**3** - High			

TEXTBOOKS:

T1 Prabhavati. Y & etal , "English All Round –Communication Skills for Undergraduate Learners" ,Orient Black Swan, Hyderabad, 2019

T2 "The Great Indian Scientists" published by Cengage Learning India Pvt. Ltd., Delhi, 2017

REFERENCE BOOKS:

R1 Swan,M., "PracticalEnglishUsage", OxfordUniversityPress, 2016.

R2 Kumar,SandLatha, P,"CommunicationSkills", OxfordUniversityPress,2018.

R3 RizviAshrafM.,"EffectiveTechnicalCommunication",TataMcGrawHill,NewDelhi,2008.

R4 BaradwajKumkum,"Professional Communication",I.K.International PublishingHousePvt.Lt.,NewDelhi,2008.

R5 Wood,F.T.,"RemedialEnglishGrammar",Macmillan, 2007.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction to syllabus	01	11-01-2021		TLM2	
2.	Proposal to Girdle The Earth by Nellie Bly	02	18-01-2021 19-01-2021		TLM2	
3.	Reading: Skimming for main idea ; Scanning for specific information	01	20-01-2021		TLM2	
4.	Content words and Function words	01	25-01-2021		TLM2	
5.	Word forms – verbs; Adjectives & adverbs	01	27-01-2021		TLM2	
6.	Nouns – countable & uncountable, singular and plural nouns Word order in sentences, "Wh" questions	01	01-02-2021		TLM2	
7.	Writing: Paragraph writing, Paragraph analysis	02	02-02-2021 03-02-2021		TLM2 TLM6	
No. of classes required to complete UNIT-I: 09				**No. of classes taken:**		

UNIT-II:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
8.	The District School As It Way by One Who Went to it - Warren Burton	02	08-02-2021 09-02-2021		TLM2	
9.	Identifying sequence of ideas	01	10-02-2021		TLM2	

10.	Cohesive devices: linkers /signposts/transition signals	01	15-02-2021		TLM2	
11.	Synonyms meanings of words / Phrases in the context	01	16-02-2021		TLM2	
12.	Essay Writing - Memo drafting	02	17-02-2021 22-02-2021		TLM2 TLM6	
No. of classes required to complete UNIT-II: 07				**No. of classes taken:**		

UNIT-III:

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
13.	The Future of Work	02	23-02-2021 24-02-2021		TLM2 TLM6	
14.	Making basic inferences, Strategies to uses text clues for comprehension	01	08-03-021		TLM2	
15.	Verbs :tenses, reporting verbs for academic purpose	02	09-03-021 10-03-021		TLM2	
16.	Summarizing rephrasing what is read	01	15-03-021		TLM2	
17.	avoiding redundancies and repetitions - Abstract Writing	02	16-03-021 17-03-021		TLM2 TLM6	
No. of classes required to complete UNIT-III: 08				**No. of classes taken:**		

UNIT-IV:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
18.	APJ Abdul Kalam	01	22-03-021		TLM2 TLM2	
19.	APJ Abdul Kalam	01	23-03-021		TLM2	
20.	Direct-Indirect speech	01	24-03-021		TLM2	
21.	Articles and their omission	01	30-03-021		TLM2	
22.	E-mail drafting	02	31-03-021 05-04-021		TLM2 TLM6	
No. of classes required to complete UNIT-IV: 06				**No. of classes taken:**		

UNIT-V:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
23.	C.V.Raman	01	06-04-021		TLM2	
24.	C.V.Raman	01	07-04-021		TLM2	
25.	Subject – Verb agreement	01	12-04-021		TLM2	
26.	Prepositions	01	19-04-021		TLM2	
27.	Formal Letter Writing	01	20-04-021		TLM2 TLM6	
No. of classes required to complete UNIT-V: 05				**No. of classes taken:**		

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PART-C

EVALUATION PROCESS (R17 Regulation):

Evaluation Task	**Marks**
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II& UNIT-III (Half of the Syllabus))	M1=15
I-Quiz Examination (Units-I, II & UNIT-III (Half of the Syllabus))	Q1=10
Assignment-II (Unit-III (Remaining Half of the Syllabus), IV & V)	A2=5
II- Descriptive Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	M2=15
II-Quiz Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	Q2=10
Mid Marks =80% of Max((M1+Q1+A1),(M2+Q2+A2))+20% of Min((M1+Q1+A1), (M2+Q2+A2))	M=30
Cumulative Internal Examination (CIE): M	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	100

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Title	**Course Instructor**	**Course Coordinator**	**Module Coordinator**	**Head of the Department**
Name of the Faculty	**K. Sridevi**	**Dr. B. Samrajya Lakshmi**	**Dr. B. Samrajya Lakshmi**	**Dr. A. Ramireddy**
Signature				

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING
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L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

Part-A

PROGRAM : B.Tech., I-Sem.,(CSE/A)
ACADEMIC YEAR : 2020-2021
COURSE NAME & CODE : APPLIED PHYSICS LAB & 20 FE 54
L-T-P STRUCTURE : 0-0-3
COURSE CREDITS : 1
COURSE INSTRUCTOR : **P.Vijaya Sirisha/ Dr S Yusub**
COURSE COORDINATOR : **Dr. S. YUSUB**

Course Educational Objective:

The theoretical ideas, Analytical techniques, graphical analysis and concepts covered in the lecture by completing a host of experiments with the procedures and observational skills for appropriate use of simple and complex apparatus.

Course Outcomes: At the end of the course, the student will be able to:
CO1: Analyze the wave characteristics of light.
CO2: Estimate the magnetic field using Stewart's and Gee's apparatus.
CO3: Verify the characteristics of semi conductor diodes.
CO4: Determine the acceptance angle and numerical aperture of optical fiber.
CO5: Improve report writing skills and individual team work with ethical values.

COURSE ARTICULATION MATRIX (Correlation between Cos & POs, PSOs):

Applied Physics Lab												
COURSE DESIGNED BY	**FRESHMAN ENGINEERING DEPARTMENT**											
Course Outcomes	**Programme Outcomes**											
PO's →	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO1.	**3**	**3**	**1**	**1**								**1**
CO2.	**3**	**3**	**1**	**1**								**1**
CO3.	**3**	**3**	**1**	**1**								**1**
CO4.	**3**	**3**	**1**	**1**								**1**
CO5.								**2**	2	**2**		
1 = slight (Low)	**2 = Moderate (Medium)**							**3 = Substantial (High)**				

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High).

BOS APPROVED TEXT BOOKS:
1. Lab Manual Prepared by the LBRCE.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): Section- ECE-C

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction	3	20-01-2021		**TLM4**	1,2,3,4	T1	
2.	Demonstration	3	27-01-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
3.	Experiment 1	3	03-02-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
4.	Experiment 2	3	10-02-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
5.	Experiment 3	3	17-02-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
6.	Experiment 4	3	24-02-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
7.	Experiment 5	3	03-03-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
8.	Experiment 6	3	17-03-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
9.	Experiment 7	3	24-03-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
10.	Experiment 8	3	31-03-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
11.	Experiment 9	3	07-04-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
12.	Experiment 10	3	14-04-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
13.	**Internal Exam**	3	28-04-2021		**TLM4**	CO1, CO2, CO3, CO4, CO5	T1	
No. of classes required to complete UNIT-I		48			No. of classes taken:			

EVALUATION PROCESS:

Evaluation Task	Expt. no's	Marks
Day to Day work = **A**	1,2,3,4,5,6,7,8	A=20

Internal test = **B**	1,2,3,4,5,6,7,8	B=10
Evaluation of viva voce = **C**	1,2,3,4,5,6,7,8	C = 5
Evaluation of attendance Marks = **D**	1,2,3,4,5,6,7,8	D = 5
Cumulative Internal Examination : A + B + C + D = 40	1,2,3,4,5,6,7,8	**40**
Semester End Examinations = E	1,2,3,4,5,6,7,8	**E = 60**
Total Marks: A + B + C + D + E = 100	1,2,3,4,5,6,7,8	**100**

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

1.To Attain a solid foundation in Electronics & Communication Engineering fundamentals with an attitude to pursue continuing education.
2. To Function professionally in the rapidly changing world with advances in technology.
3. To Contribute to the needs of the society in solving technical problems using Electronics & Communication Engineering principles, tools and practices.
4. To Exercise leadership qualities, at levels appropriate to their experience, which addresses issues in a responsive, ethical, and innovative manner .

PROGRAM OUTCOMES:

Engineering Graduates will be able to:

(1). **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

(2). **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

(3). **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

(4). **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

(5). **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

(6). **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

(7).**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

(8). **Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

(9). **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

(10). **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

(11). **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

(12).**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs):

Graduate of the ECE will have the ability to

(1) Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.

(2) Design and Analyze Analog and Digital Electronic Circuits or systems and Implement real time applications in the field of VLSI and Embedded Systems using relevant tools

(3) Apply the Signal processing techniques to synthesize and realize the issues related to real time applications.

P VIJAYA SIRISHA / Dr S Yusub	Dr. S. YUSUB	Dr. S. YUSUB	Dr A. RAMI REDDY
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)

DEPARTMENT OFCOMPUTER SCIENCE AND ENGINEERING

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COURSE HANDOUT

PROGRAM **:** B.Tech., I-Sem.A/SEC

ACADEMIC YEAR **:** 2020-21

COURSE NAME & CODE **:** Programming for Problem Solving Using C LAB – 20CS51

L-T-P STRUCTURE **:** 3-0-0

COURSE CREDITS **:** 1

COURSE INSTRUCTOR **:** Dr. D. JAGAN MOHAN REDDY

COURSE COORDINATOR **:** Dr. D. JAGAN MOHAN REDDY

PRE-REQUISITE: NIL

COURSE OBJECTIVE:

The objective of the course is to learn the basic elements of C Programming Structures like Data Types, Expressions, Control Statements, and Various I/O Functions and to solve simple mathematical problems using control structures. Design and implementation of various software components, which solve real world problems.

COURSE OUTCOMES (CO):

CO1: Apply control structures of C in solving computational problems

CO2: Implement derived datatypes & use modular programming in problem solving

CO3:: Implement user defined datatypes and perform file operations

CO4: Improve individual / teamwork skills, communication & report writing skills with ethical values.

COURSE ARTICULATION MATRIX(Correlation between Cos, Pos&PSOs):

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	2	3	1	-	-	-	-	-	1	1		2	3	1	1
CO2	2	3	1	-	-	-	-	-	1	1		2	3	1	1
CO3	2	3	1	-	-	-	-	-	1	1		2	3	1	1
CO4															

Note: 1- Slight (Low), **2 -** Moderate (Medium), **3 -** Substantial (High)

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	HOD Sign
1.	Module - I	3	21-01-2021		
2.	Module – 2	3	28-01-2021		
3.	Module – 3	3	04-02-2021		
4.	Module – 4	3	11-02-2021		
5.	Module – 5	3	18-02-2021		
6.	Module – 6	3	25-02-2021		
7.	Module – 7	3	04-03-2021		
8.	Module – 7	3	18-03-2021		
9.	Module – 8	3	25-03-2021		
10.	Module -9	3	01-03-2021		
11.	Module 10	3	08-04-2021		
12.	***LAB INTERNAL EXAM***	3	***31-04-2021***		

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Dr. D.Jagan Mohan Reddy	Dr. D.Jagan Mohan Reddy	Dr. D.Jagan Mohan Reddy	Dr. D. Veeraiah
Signature				

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http://cse.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor :B SIVARAMAKRISHNA
Course Name & Code : IT WORKSHOP LAB
L-T-P Structure :0-0-3
Program/Sem/Sec : B.Tech., CSE, I-Sem., Section – A A.Y : 2020 - 2021

PRE-REQUISITE: NIL

COURSE OBJECTIVE: The objective of the course is to impart knowledge about the components of PC, Assembling PC, Installation of OS, softwares like MS-Office, LaTex and concepts related to Networking, Internet as well as antivirus.

COURSE OUTCOMES (COs)

At the end of the course, the student will be able to:

CO1	Identify the basic hardware components, keyboard shortcuts, assembling and disassembling of the system (PC).
CO2	Demonstrate Operating System installation, apply various commands of linux operating system, networking.
CO3	Create web pages using HTML, documents using applications like LaTeX, Google forms anduse application software packages: MS-Word, MS-Excel, MS-Power Point to create documents and presentation.
CO4	Improve individual / teamwork skills, communication & report writing skills with ethical values.

COURSE ARTICULATION MATRIX(Correlation between COs, POs & PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CO3	3	-	-	-	3	-	-	-	-	-	-	-	-	1	-
CO4	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High).

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

S.No.	Programs to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Identifying the peripheral components of a computer.Understanding the Block diagram of the CPU	3	23/01/2021		TLM2/ TLM4	
2.	Disassembling and assembling the PC back to working condition	3	30/01/2021		TLM2/ TLM4	
3.	1.Installation of MS WINDOWS and LINUX on personal computer. 2. Linux Operating System commands	3	06/02/2021		TLM2/ TLM4	
4.	Working on Networking Commands	3	20/02/2021		TLM2/ TLM4	
5.	Working on InternetServices	3	27/02/2021		TLM2/ TLM4	
6.	Introduction to HTML and its tags. Preparing a simple website/homepage.	3	06/03/2021		TLM2/ TLM4	
7.	DemonstrationandPracticeofTextEditors	3	20/03/2021		TLM2/ TLM4	
8.	Demonstration and practice of Microsoft Word, Power Point, Microsoft Excel	3	27/03/2021		TLM2/ TLM4	
9.	DemonstrationandpracticeofLaTeX	3	03/04/2021		TLM2/ TLM4	
10.	Creating online documents using Google docs. Creating and sharing online quiz exam with marks/Grads Creating and sharing Bio-data form.	3	17/04/2021		TLM2/ TLM4	
11.	Lab Internal Exam	3	24/04/2021			

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/SwayamPrabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO 1	**Programming Paradigms:** To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.
PSO 2	**Data Engineering:** To inculcate an ability to Analyse, Design and implement data driven applications into the students.
PSO 3	**Software Engineering:** Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products

Course Instructor	Course Coordinator	Module Coordinator	HOD
B S R KRISHNA	B S R KRISHNA	DR. D.VEERAIAH	DR. D.VEERAIAH

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)
Accredited by NAAC & NBA (Under Tier - I), ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi. and Affiliated to JNTUK, Kakinada
L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.
Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor: Ms. K. SRIDEVI
Course Name & Code :PCS LAB, 20FE51
L-T-P Structure **: 0-0-2**
Credits:01
Program/Sem/Sec : CSE–A- I SEM
A.Y. **:**2020-21

PREREQUISITE:NIL

COURSE EDUCATIONAL OBJECTIVES (CEOs): To improve the proficiency of students in English with an emphasis on better communication in formal and informal situations; Develop speaking skills required for expressing their knowledge and abilities and to face interviews with confidence.

COURSE OUTCOMES (COs): At the end of the course, student will be able to

CO1	Introduce one-self and others using appropriate language and details.	L2
CO2	Comprehend short talks and speak clearly on a specific topic using	L2
CO3	Report effectively after participating in informal discussions ethically.	L1
CO4	Interpret data aptly, ethically & make oral presentations without	L3

Syllabus:ProfessionalCommunicationLab(PCS)shallhavetwoparts:

- **Computer Assisted Language Learning (CALL) Lab** for 60 students with 60 systems,LANfacilityandEnglishlanguage software forself-studybylearners.
- **Interactive Communication Skills (ICS) Lab.** with movable chairs and audio-visualaids with a P.A System, a T. V., a digital stereo – audio & video system and camcorderetc.

Exercise– I

CALLLab: Understand-Sentencestructure.

ICSLab:Practice-
Listening:Identifyingthetopic,thecontextandspecificinformation,
Speaking:Introducingoneselfandothers.

Exercise–II

CALLLab:Understand-Framingquestions.

ICSLab:Practice-Listening:Answeringaseriesof questionsaboutmainideaandsupportingideasafterlisteningtoaudiotext.

Speaking:Discussinginpairs/smallgroupsonspecifictopics;Deliveringshortstructuredtalksusingsuitablecohesivedevices(JAM)

Exercise–III

CALLLab:Understand- Comprehensionpractice– StrategiesforEffectiveCommunication

ICS Lab: Practice - Listening: Listening for global comprehension and SummarizingSpeaking:Discussingspecifictopicsinpairs/smallgroups,reportingwhat isdiscussed

Exercise–IV

CALLLab:Understand-FeaturesofGoodConversation– StrategiesforEffectiveCommunication.

ICS Lab: Practice -Listening: making predictions while listening to conversations/transactionaldialogues with/without videoSpeaking: Role – plays – formal & informal – asking for andgivinginformation/directions/instructions/suggestions

Exercise– V

CALLLab:Understand-FeaturesofGoodPresentation,MethodologyofGroupDiscussion

ICSLab:Practice –IntroductiontoGroupDiscussions.

Listening:Answeringquestions, identifyingkeytermsandunderstandingconcepts.

Speaking: FormalOral &Posterpresentationsontopicsfromacademiccontextswithouttheuseof PPT.

LabManual:

1. Prabhavati.Y&etal,"EnglishAllRound– CommunicationSkillsforUndergraduateLearners",OrientBlackSwan,Hyderabad,2019.

SuggestedSoftware:

1. DigitalMentor:Globarena, Hyderabad,2005
2. SkyPronunciationSuite:YoungIndiaFilms, Chennai,2009
3. MasteringEnglishinVocabulary,Grammar,Spelling,Composition,DorlingKindersley,USA,2001
4. DorlingKindersleySeriesofGrammar,Punctuation,Composition, USA,2001
5. OxfordTalking Dictionary,TheLearningCompany,USA,2002
6. LearningtoSpeakEnglish- 4CDs. TheLearningCompany,USA,2002
7. CambridgeAdvancedLearnersEnglishDictionary(CD).CambridgeUniversityPress,New Delhi,2008.

COURSE ARTICULATION MATRIX(Correlation between COs, POs & PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1					3					3	3				
CO2					3					3	3				

CO3					**3**					**3**	**3**				
CO4					**3**					**3**	**3**				
1 - Low					**2 –**Medium							**3 -** High			

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
91.	Introduction to syllabus	02	19-01-2021		TLM4	
92.	Self Introduction & Introducing others	02	02-02-2021		TLM4	
93.	Self Introduction & Introducing others	02	09-02-2021		TLM4	
94.	JAM- I(Short and Structured Talks)	02	16-02-2021		TLM4	
95.	JAM-II(Short and Structured Talks)	02	23-02-2021		TLM4	
96.	Role Play-I(Formal and Informal)	02	09-03-2021		TLM4	
97.	Role Play-II (Formal and Informal)	02	16-03-2021		TLM4	
98.	Group Discussion-I (Reporting the discussion)	02	23-03-2021		TLM4, TLM6	
99.	Group Discussion-II	02	30-03-2021		TLM4, TLM6	
100.	Oral & Poster Presentation	02	06-04-2021		TLM2, TLM4	
101.	Lab Internal Exam	02	20-04-2021			
No. of classes required to complete Syllabus: 22				**No. of classes taken:**		

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PART-C

EVALUATION PROCESS (R20 Regulation):

Evaluation Task	**Marks**
Cumulative Internal Examination (CIE): M	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	100

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
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PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	**K. Sridevi**	**Dr. B. Samrajya Lakshmi**	**Dr. B. Samrajya Lakshmi**	**Dr. A. Ramireddy**
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi, NAAC Accredited, Accredited by NBA, Certified by ISO 9001:2015)
L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

Part-A

PROGRAM : B. Tech. I-Sem.; CSE -B

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : Professional Communication - I (20FE01)

L-T-P STRUCTURE : 3-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr. B. Sreenivasa Reddy

COURSE COORDINATOR: Dr. B. Samrajya Lakshmi

Pre-requisites : Basics in English Grammar & Vocabulary

Course Educational Objective (CEOs) : Improve the proficiency of students in English with an emphasis on Vocabulary& Grammar for better communication in formal and informal situations; Develop listening skills required for thorough understanding and analysis to face interviews with confidence.

Course Outcomes (COs): At the end of the course, the student will be able to

CO1 : Use English vocabulary & grammar effectively while speaking and writing.
CO2 : Comprehend the given texts and Communicate confidently in formal and informal contexts.
CO3 : Draft E-mails& Memos
CO4 : Understand the written and spoken information thoroughly.
CO5 : Face interviews with confidence.

Course Articulation Matrix:

Course Code	COs	Programme Outcomes											PSOs		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
17FE01	CO1				2					3	3		2			
	CO2		1		2		1			3	3		2			
	CO3				2					3	3		2			
	CO4		1		2		1			3	3		2			
	CO5				2					3	3		2			
1 = Slight (Low) 2 = Moderate (Medium) 3-Substantial(High)																

BOS APPROVED TEXT BOOKS:

T1	Board of Editors, "Fluency in English – A Course book for Engineering Students", Orient Black Swan, Hyderabad, 2016.
T2	Dhanavel S.P, "English and Soft Skills", Orient Black Swan, Hyderabad, 2010.

BOS APPROVED REFERENCE BOOKS:

R1	Murphy, "English Grammar with CD", Cambridge University Press, New Delhi, 2004.
R2	Rizvi Ashraf M., "Effective Technical Communication", Tata Mc Graw Hill, New Delhi, 2008.
R3	Baradwaj Kumkum, "Professional Communication", I.K.International Publishing House Pvt.Lt., New Delhi, 2008.
R4	Raman, Meenakshi; Sharma, Sangeeta,. "Technical Communication -Principles and Practice" Oxford University Press, New Delhi, Third Edition. 2015.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-A/B/C

UNIT-I :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to UNIT-I	1	11.01.2021		TLM1			
2.	Proposal to Girdle The Earth by Nellie Bly	1	18.01.2021		TLM1	CO1	T1	
3.	Skimming for main idea ; Scanning for specific information	1	20.01.2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	
4.	Content words and Function words	1	23.01.2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	
5.	Word forms – verbs; Adjectives & adverbs	1	25.01.2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	
6.	Nouns – countable &	1	27.01.2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	

	uncountable, singular and plural nouns							
7.	Word order in sentences, "Wh" questions	1	30.01.2021		TLM1	CO1	T1	
8.	Paragraph writing, Paragraph analysis	1	01.02.2021		TLM1, TLM2	CO1	T1,R2,R4	
9.	Punctuation & Capital letters	1	06.02.2021		TLM1, TLM2, TLM5, TLM6	CO1	T2,R2,R4	
No. of classes required to complete UNIT-I : 09					No. of classes taken:			

UNIT-II :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
10.	The District School As It Way by One Who Went to it - Warren Burton	1	08.02.2021		TLM1, TLM6	CO2	T2	
11.	Identifying sequence of ideas	1	10.02.2021		TLM1, TLM6	CO2	T2,R2,R4	
12.	Cohesive devices: linkers /signposts/transition signals	1	13.02.2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
13.	Cohesive devices: linkers /signposts/transition signals	1	15.02.2021		TLM1, TLM6	CO2	T2	
14.	Synonyms meanings of words / Phrases in the context	1	17.02.2021		TLM1, TLM6	CO2	T2,R2,R4	

15.	Synonyms meanings of words / Phrases in the context	1	20.02.2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
16.	Memo drafting	1	22.02.2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
17.	Memo drafting	1	24.02.2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
No. of classes required to complete UNIT-II : 8					No. of classes taken:			

UNIT-III :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
18.	The Future of Work	1	27.02.2021		TLM1	CO3	T1	
19.	Making basic inferences, Strategies to uses text clues for comprehension	1	01.03.2021		TLM1, TLM2, TLM5, TLM6	CO3	T1,R2, R4	
20.	Verbs :tenses, reporting verbs for academic purpose	1	03.03.2021		TLM1, TLM2, TLM5, TLM6	CO3	T1,R1, R3	
21.	reporting verbs for academic purpose	1	06.03.2021		TLM1, TLM2, TLM5, TLM6	CO3	T1,R1, R3	
MID EXAMS: 08-03-2021 to 13.03.2021								
22.	Summarizing rephrasing what is read	1	15.03.2021		TLM1, TLM2, TLM5, TLM6	CO3	T1,R1, R3	
23.	Avoiding redundancies and repetitions	2	17.03.2021 20.03.2021		TLM1, TLM2, TLM5, TLM6	CO3	T1,R1, R3	
No. of classes required to complete UNIT-III : 07					No. of classes taken:			

UNIT-IV :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
24.	APJ Abdul Kalam	1	22.03.2021		TLM1, TLM6	CO4	T2	
25.	Direct-Indirect speech	3	24.03.2021 26.03.2021 31.03.2021		TLM1, TLM6	CO4	T2,R2,R4	
26.	Articles and their omission	2	03.04.2021 07.04.2021		TLM1, TLM6	CO4	T2,R2,R4	
27.	E-mail drafting	1	10.04.2021		TLM1, TLM6	CO4	T2,R2,R4	
No. of classes required to complete UNIT-IV : 7					No. of classes taken:			

UNIT-V :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	C.V.Raman	1	12.04.2021		TLM1, TLM6	CO5	T2	
29.	Subject – Verb agreement	1	17.04.2021		TLM1, TLM6	CO5	T2,R2,R4	
30.	Prepositions	1	19.04.2021		TLM1, TLM6	CO5	T2,R2,R4	
31.	Formal Letter Writing	1	24.04.2021		TLM1, TLM2, TLM5, TLM6	CO5	T2,R2,R4	
No. of classes required to complete UNIT-V : 04					No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign
32.	Verbal Reasoning	1	24.04.2021		TLM1, TLM2, TLM5, TLM6	CO1 & CO5	Book of Reasoning by Agarwal	

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

Part - C

EVALUATION PROCESS:

Evaluation Task	Marks
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II & UNIT-III (Half of the Syllabus))	M1=15
I-Quiz Examination (Units-I, II & UNIT-III (Half of the Syllabus))	Q1=10
Assignment-II (Unit-III (Remaining Half of the Syllabus), IV & V)	A2=5
II- Descriptive Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	M2=15
II-Quiz Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	Q2=10
Mid Marks =80% of Max ((M1+Q1+A1), (M2+Q2+A2)) + 20% of Min ((M1+Q1+A1), (M2+Q2+A2))	M=30
Cumulative Internal Examination (CIE): M	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	100

PROGRAM OUTCOMES

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
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clear instructions.

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12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Mr. B. Sreenivasa Reddy	**Prof. B. Samrajya Lakshmi**	**Prof. B.Samrajya Lakshmi**	**Prof. A. Ramireddy**
Course Instructor	**Course Coordinator**	**Module Coordinator**	**HOD**

COURSE HANDOUT

Part-A

PROGRAM : I B. Tech., I-Sem., CSE B
ACADEMIC YEAR : 2020-21
COURSE NAME & CODE : Differential Equations
L-T-P STRUCTURE : 3-2-0
COURSE CREDITS : 4
COURSE INSTRUCTOR : Dr. K. Jhansi Rani
COURSE COORDINATOR : Dr. A. Rami Reddy
PRE-REQUISITES : None

COURSE EDUCATIONAL OBJECTIVES (CEOs): The objective of this course is to introduce the first order and higher order differential equations, functions of several variables. The students will also learn solving of first order partial differential equations.

COURSE OUTCOMES (COs)

After completion of the course, the student will be able to

CO1: Apply first order and first degree differential equations to find orthogonal trajectories.

CO2: Distinguish between the structure and methodology of solving higher order differential equations with constant coefficients.

CO3: Apply various Numerical methods to solve initial value problem.

CO4: Generate the infinite series for continuous functions and investigate the functional dependence.

CO5: Solve partial differential equations using Lagrange's method.

COURSE ARTICULATION MATRIX (Correlation between Cos &POs, PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	-	2	-	-	-	-	-	-	-	1
CO2	3	2	-	2	-	-	-	-	-	-	-	1
CO3	3	2	-	2	-	-	-	-	-	-	-	1
CO4	2	1	-	1	-	-	-	-	-	-	-	1
CO5	3	2	-	2	-	-	-	-	-	-	-	1

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High).

BOS APPROVED TEXT BOOKS:

T1 Dr. B.S. Grewal, "Higher Engineering Mathematics", 42nd Edition, Khanna Publishers, New Delhi, 2012.

T2 Dr. B. V. Ramana, "Higher Engineering Mathematics", 1st Edition, TMH, New Delhi, 2010.

BOS APPROVED REFERENCE BOOKS:

R1 M. D. Greenberg, "*Advanced Engineering Mathematics*", 2nd Edition, TMH Publications, New Delhi, 2011.

R2 Erwin Kreyszig, *"Advanced Engineering Mathematics"*, 8th Edition, John Wiley & sons, New Delhi, 2011.

R3 W.E. Boyce and R. C. Diprima, " *Elementary Differential Equations"* , 7th Edition, John Wiley & sons, New Delhi,2011.

R4 S. S. Sastry, *" Introductory Methods of Numerical Analysis"* 5th Edition, PHI Learning Private Limited, New Delhi, 2012.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN):

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to the course, Course Outcomes	1	19/01/2021	18/01/2021	TLM1			

UNIT-I: Differential Equations of First Order and First Degree

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
2.	Introduction to UNIT I	1	20/01/2021		TLM2	CO1	T1,T2	
3.	Formation of Differential Equations	1	22/01/2021		TLM1	CO1	T1,T2	
4.	Exact DE	1	22/01/2021		TLM1	CO1	T1,T2	
5.	Non-exact DE Type I	1	23/01/2021		TLM1	CO1	T1,T2	
6.	Non-exact DE Type II	1	27/01/2021		TLM1	CO1	T1,T2	
7.	Non-exact DE Type III	1	29/01/2021		TLM1	CO1	T1,T2	
8.	**TUTORIAL 1**	1	29/01/2021		TLM3	CO1	T1,T2	
9.	Non-exact DE Type IV	1	30/01/2021		TLM1	CO1	T1,T2	
10.	Orthogonal Trajectories (Cartesian)	1	02/02/2021		TLM1	CO1	T1,T2	
11.	Orthogonal Trajectories (polar)	1	03/02/2021		TLM1	CO1	T1,T2	
12.	Orthogonal Trajectories (polar)	1	05/02/2021		TLM1	CO1	T1,T2	
13.	Problems	1	05/02/2021		TLM1	CO1	T1,T2	
14.	**TUTORIAL 2**	1	06/02/2021		TLM3	CO1	T1,T2	
No. of classes required to complete UNIT-I		13			No. of classes taken:			

UNIT-II: Higher Order Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Introduction to UNIT II	1	10/02/2021		TLM2	CO2	T1,T2	
16.	Solving a homogeneous DE	1	12/02/2021		TLM1	CO2	T1,T2	
17.	Finding Particular Integral, P.I for e^{ax+b}	1	12/02/2021		TLM1	CO2	T1,T2	
18.	P.I for Cos bx, or sin bx	1	13/02/2021		TLM1	CO2	T1,T2	
19.	P.I for polynomial function	1	16/02/2021		TLM1	CO2	T1,T2	
20.	P.I for $e^{ax+b}v(x)$	1	17/02/2021		TLM1	CO2	T1,T2	
21.	P.I for $e^{ax+b}v(x)$	1	19/02/2021		TLM1	CO2	T1,T2	
22.	P.I for $x^k v(x)$	1	19/02/2021		TLM1	CO2	T1,T2	
23.	Method of Variation of parameters	1	20/02/2021		TLM1	CO2	T1,T2	
24.	**TUTORIAL 3**	1	23/02/2021		TLM3	CO2	T1,T2	

25.	Method of Variation of parameters	1	24/02/2021		TLM1	CO2	T1,T2	
26.	**TUTORIAL 4**	1	26/02/2021		TLM3	CO2	T1,T2	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III: Numerical solution of Ordinary Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
27.	Introduction to Unit-III	1	26/02/2021		TLM2	CO3	T1,T2	
28.	Solution by Taylor's series	1	27/02/2021		TLM1	CO3	T1,T2	
29.	Solution by Taylor's series	1	02/03/2021		TLM1	CO3	T1,T2	
30.	Picard's Method	1	03/03/2021		TLM1	CO3	T1,T2	
31.	Picard's Method	1	06/03/2021		TLM1	CO3	T1,T2	
I MID EXAMINATIONS (08-03-2021 TO 15-03-2021)								
32.	Euler's Method	1	16/03/2021		TLM1	CO3	T1,T2	
33.	Modified Euler's Method	1	17/03/2021		TLM1	CO3	T1,T2	
34.	Runge- Kutta Method	1	19/03/2021		TLM1	CO3	T1,T2	
35.	**TUTORIAL 6**	1	19/03/2021		TLM3	CO3	T1,T2	
No. of classes required to complete UNIT-III		9			No. of classes taken:			

UNIT-IV: Functions of Several Variables

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
36.	Introduction to UNIT IV	1	20/03/2021		TLM1	CO4	T1,T2	
37.	Generalized Mean Value Theorem, Taylor's series	1	23/03/2021		TLM1	CO4	T1,T2	
38.	Maclaurin's series	1	24/03/2021		TLM1	CO4	T1,T2	
39.	Functions of several variables	1	27/03/2021		TLM1	CO4	T1,T2	
40.	Jacobians (polar, cylindrical, spherical coordinates)	1	30/03/2021		TLM1	CO4	T1,T2	
41.	Functional dependence	1	31/03/2021		TLM1	CO4	T1,T2	
42.	**TUTORIAL 7**	1	03/04/2021		TLM3	CO4	T1,T2	
43.	Maxima and Minima of functions of two variables	1	06/04/2021		TLM1	CO4	T1,T2	
44.	Maxima and Minima of functions of two variables	1	07/04/2021		TLM1	CO4	T1,T2	
45.	**TUTORIAL 8**	1	09/04/2021		TLM3	CO4	T1,T2	
No. of classes required to complete UNIT-IV		10			No. of classes taken:			

UNIT-V: Partial Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
46.	Introduction to UNIT V	1	10/04/2021		TLM1	CO5	T1,T2	
47.	Formation of PDE by	1	12/04/2021		TLM1	CO5	T1,T2	

	elimination of arbitrary constants							
48.	Formation of PDE by elimination of arbitrary functions	1	16/04/2021		TLM1	CO5	T1,T2	
49.	Formation of PDE by elimination of arbitrary functions	1	16/04/2021		TLM1	CO5	T1,T2	
50.	**TUTORIAL 9**	1	17/04/2021		TLM3	CO5	T1,T2	
51.	Solving of PDE	1	20/04/2021		TLM1	CO5	T1,T2	
52.	Lagrange's Method	1	23/04/2021		TLM1	CO5	T1,T2	
53.	Lagrange's Method	1	23/04/2021		TLM1	CO5	T1,T2	
54.	**TUTORIAL 10**	1	24/04/2021		TLM1	CO5	T1,T2	
No. of classes required to complete UNIT-V		9			No. of classes taken:			

Contents beyond the Syllabus

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
55.	Solving of PDE other methods	1	24/04/2021		TLM5	CO5	T1,T2	
No. of classes		1			No. of classes taken:			
II MID EXAMINATIONS (26-04-2021 TO 30-04-2021)								

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM2	PPT	**TLM6**	Assignment or Quiz
TLM3	Tutorial	**TLM7**	Group Discussion/Project
TLM4	Demonstration (Lab/Field Visit)		

Part - C

EVALUATION PROCESS:

Evaluation Task	**Marks**
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II & UNIT-III (Half of the Syllabus))	M1=15
I-Quiz Examination (Units-I, II & UNIT-III (Half of the Syllabus))	Q1=10
Assignment-II (Unit-III (Remaining Half of the Syllabus), IV & V)	A2=5
II- Descriptive Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	M2=15
II-Quiz Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	Q2=10
Mid Marks =80% of Max ((M1+Q1+A1), (M2+Q2+A2)) + 20% of Min ((M1+Q1+A1), (M2+Q2+A2))	M=30
Cumulative Internal Examination (CIE): M	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	100

Dr. K. Jhansi Rani	**Dr. A. RAMI REDDY**	**Dr. A. RAMI REDDY**	**Dr. A. RAMI REDDY**
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

FRESHMAN ENGINEERING DEPARTMENT

COURSE HANDOUT

PART-A

PROGRAM	**: B.Tech., I-Sem., CSE-B**
ACADEMIC YEAR	**: 2020-21**
COURSE NAME & CODE	**: APPLIED PHYSICS & 20FE07**
L-T-P STRUCTURE	**: 4-1-0**
COURSE CREDITS	**: 3**
COURSE INSTRUCTOR	**: N. T. SARMA**
PRE-REQUISITE	**: Nil**

COURSE EDUCATIONAL OBJECTIVES (CEOs): It enables the students to understand the fundamental concepts ofoptics, quantum mechanics, free electron theory of metals, semiconductors, dielectrics, and their applications.

COURSE OUTCOMES (COs): At the end of this course, the student will be able to

CO 1	**Define** the nature of Interference and Diffraction.
CO 2	**Apply** the Lasers and Optical Fibers in different fields.
CO 3	**Estimate** the electrical conductivity of metals.
CO 4	**Analyze** the properties of Semiconducting materials.
CO5	**Classify** the different types of Magnetic and Dielectric materials.

COURSE ARTICULATION MATRIX (Correlation between COs, POs & PSOs):

APPLIED PHYSICS												
COURSE DESIGNED BY	**FRESHMAN ENGINEERING DEPARTMENT**											
Course Outcomes	**Programme Outcomes**											
PO's →	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO1.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO2.	**3**	**3**	**2**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO3.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO4.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
CO5.	**3**	**3**	**1**	**1**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**1**
1 = slight (Low)			**2 = Moderate (Medium)**					**3 = Substantial (High)**				

BOS APPROVED TEXT BOOKS:

T1 : V. Rajendran, "*Engineering Physics*", TMH, New Delhi, 6th Edition, 2014.
T2 :M.N. Avadhanulu, P.G. Kshirsagar, "Engineering *Physics*", S. Chand &Co., 2nd Edition, 2014.

BOS APPROVED REFERENCE BOOKS:

R1: M.N. Avadhanulu, TVS Arun Murthy, "Applied *Physics*", S. Chand & Co., 2nd Edition, 2007.
R2 :P.K. Palani Samy, "*Applied Physics*", Sci. Publ. Chennai, 4th Edition, 2016.
R3 :P. Sreenivasa Rao, K Muralidhar, "*Applied Physics*", Him. Publi. Mumbai,1st Edition, 2016.
R4 :Hitendra K Mallik , AK Singh " *Engineering Physics*", TMH, New Delhi, 1st Edition, 2009.

WEB REFERENCES AND E-TEXT BOOKS

1. http://www.freebookcentre.net/Physics/Solid-State-Physics-Books.html
2. http://physicsdatabase.com/free-physics-books/
3. http://www.e-booksdirectory.com
4. http://www.thphys.physics.ox.ac.uk

TEACHING LEARNING METHODS			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: INTERFERENCE & DIFFRACTION

Course Outcome :- CO 1; Text Book :- T1, R2

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Introduction to the Subject, Course Outcomes	1	11/01/2021		**TLM2**		
2.	General Properties of Light	1	18/01/2021		**TLM5**		
3.	General Properties of matter	1	20/01/2021		**TLM2**		
4.	Recapitulation of Basic Concepts of Physics	1	21/01/2021		**TLM6**		

5.	Superposition of waves, Coherence, Conditions for Interference	1	22/01/2021		**TLM6**		
6.	Interference from thin films	1	23/01/2021		**TLM1**		
7.	Newton's rings	1	25/01/2021		**TLM4**		
8.	TUTORIAL-1	1	27/01/2021		**TLM3**		
9.	Michelson's interferometer	1	28/01/2021		**TLM2**		
10.	Problems &Assignment/Quiz	1	29/01/2021		**TLM1**		
11.	Introduction – Diffraction, Types	1	30/01/2021		**TLM2**		
12.	Single slit diffraction	1	01/02/2021		**TLM4**		
13.	Diffraction – Circular aperture, Diffraction grating	1	03/02/2021		**TLM4**		
14.	TUTORIAL-2	1	04/02/2021		**TLM3**		
15.	Resolving power of Grating	1	05/02/2021		**TLM1**		
16.	Problems &Assignment/Quiz	1	06/02/2021		**TLM1**		
No. of classes required to complete UNIT-I: 12				No. of classes taken:			

UNIT-II: LASERS & OPTICAL FIBERS

Course Outcome :- CO 2; Text Book :- T1, R2

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Principle of laser, Absorption, Spontaneous and Stimulated emission	1	08/02/2021		**TLM2**		
2.	Einstein Coefficients	1	10/02/2021		**TLM1**		
3.	TUTORIAL-3	1	11/02/2021		**TLM3**		
4.	Nd-YAG Laser, He-Ne gas Laser	1	12/02/2021		**TLM2**		
5.	Applications of	1	13/02/2021		**TLM5**		

	LASERS						
6.	Optical Fiber principle, Structure of optical fiber	1	15/02/2021		**TLM2**		
7.	Numerical aperture and Acceptance angle	1	17/02/2021		**TLM4**		
8.	TUTORIAL-4	1	18/02/2021		**TLM3**		
9.	Types of optical fibers	1	19/02/2021		**TLM2**		
10.	Applications	1	20/02/2021		**TLM5**		
11.	Problems &Assignment/Quiz	1	22/02/2021		**TLM1**		
No. of classes required to complete UNIT-II: 11				No. of classes taken:			

UNIT-III: PRICIPLES OF QUANTUM MECHANICS & FREE ELECTRON THEORY

Course Outcome :- CO 3; Text Book :- T1, R2

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Introduction quantum mechanics,De Broglie hypothesis	1	24/02/2021		**TLM5**		
2.	TUTORIAL-5	1	25/02/2021		**TLM3**		
3.	Davisson and Germer Experiment, Physical significance of wave function	1	26/02/2021		**TLM2**		
4.	Schrodinger time dependent & independent wave equations	1	27/02/2021		**TLM1**		
5.	Particle in a box	1	01/03/2021		**TLM1**		
6.	Problems &Assignment/Quiz	1	03/03/2021		**TLM1**		
7.	Preparation for MID-1	1	04/03/2021		---		
8.	TUTORIAL-6	1	05/03/2021		**TLM3**		
9.	Preparation for MID-1		06/03/2021		---		
10.	MID-1 Exams	---	08/03/2021		---		
11.	MID-1 Exams	---	09/03/2021		---		
12.	MID-1 Exams	---	10/03/2021		---		
13.	MID-1 Exams	---	12/03/2021		---		
14.	MID-1 Exams	---	13/03/2021		---		

15.	Classical free electron theory-postulates, Success & Failures	1	15/03/2021		**TLM2**		
16.	Expression for electrical conductivity and drift velocity	1	17/03/2021		**TLM3**		
17.	Fermi-Dirac distribution function-Temperature dependence	1	18/03/2021		**TLM2**		
18.	Classification of Solids on the basis of Band theory	1	19/03/2021		**TLM6**		
19.	Problems &Assignment/Quiz	1	20/03/2021		**TLM1**		
No. of classes required to complete UNIT-III: 11				No. of classes taken:			

UNIT-IV :SEMICONDUCTOR PHYSICS

Course Outcome :- CO 4; Text Book :- T2, R1

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Introduction - Classification of semiconductors	1	22/03/2021		**TLM6**		
2.	TUTORIAL-7	1	24/03/2021		**TLM3**		
3.	Conductivity of Intrinsic and Extrinsic semiconductors	1	25/03/2021		**TLM1**		
4.	Drift and Diffusion Current, Einstein relation	1	26/03/2021		**TLM1**		
5.	Hall Effect and Hall Coefficient	1	27/03/2021		**TLM5**		
6.	Direct band gap and indirect band gap semiconductors	1	31/03/2021		**TLM2**		
7.	TUTORIAL-8	1	01/04/2021		**TLM3**		
8.	Solar Cell, Applications	1	03/04/2021		**TLM4**		
9.	Problems &Assignment/Quiz	1	07/04/2021		**TLM1**		
No. of classes required to complete UNIT-IV: 09				No. of classes taken:			

UNIT-V :MAGNETIC & DIELECTRIC MATERIALS

Course Outcome :- CO 5; Text Book :- T2, R1

S.No	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign	Remarks
1.	Introduction,Magnetic parameters	1	08/04/2021		**TLM2**		
2.	Classification of magnetic materials – Dia, para & Ferro	1	09/04/2021		**TLM6**		
3.	TUTORIAL-9	1	10/04/2021		**TLM3**		
4.	Hysteresis loop, soft and hard magnetic materials	1	12/04/2021		**TLM2**		
5.	Applications of magnetic materials	1	15/04/2021		**TLM2**		
6.	Basic Definitions, Electronic polarization	1	16/04/2021		**TLM1**		
7.	Ionic & Orientation polarization	1	17/04/2021		**TLM1**		
8.	TUTORIAL-10	1	19/04/2021		**TLM3**		
9.	Local field, Clausius Mosotti equation	1	22/04/2021		**TLM1**		
10.	Applications of dielectricmaterials	1	23/04/2021		**TLM2**		
11.	Problems & Assignment/Quiz	1	24/04/2021		**TLM1**		
12.	MID-2 Exams	---	26/04/2021		---		
13.	MID-2 Exams	---	27/04/2021		---		
14.	MID-2 Exams	---	28/04/2021		---		
15.	MID-2 Exams	---	29/04/2021		---		
16.	MID-2 Exams	---	30/04/2021		---		
No. of classes required to complete UNIT-V: 11				No. of classes taken:			

PART-C

EVALUATION PROCESS (R-20 Regulation):

Evaluation Task	Marks
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II & UNIT-III (Half of the Syllabus))	M1=15
I-Quiz Examination (Units-I, II & UNIT-III (Half of the Syllabus))	Q1=10
Assignment-II (Unit-III (Remaining Half of the Syllabus), IV & V)	A2=5
II- Descriptive Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	M2=15
II-Quiz Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	Q2=10

Mid Marks =80% of Max ((M1+Q1+A1), (M2+Q2+A2)) + 20% of Min ((M1+Q1+A1), (M2+Q2+A2))	M=30
Cumulative Internal Examination (CIE): M	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	100

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological

	change.

Course Instructor	Course Coordinator	Module Coordinator	HOD
N. T. Sarma	Dr. S. Yusub	Dr. S. Yusub	Dr. A. Rami Reddy

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT
PART-A

PROGRAM : B.Tech., I-Sem., B/S CSE

ACADEMIC YEAR : 2019-20

COURSE NAME & CODE : Programming for Problem Solving Using C – 20CS01

L-T-P STRUCTURE : 3-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr. S. Nagarjuna Reddy

COURSE COORDINATOR : Dr. D. Jagan Mohan Rddy

COURSE OBJECTIVE:

In this course student will learn about the basic elements of C programming like data types, expressions, control statements, various I/O functions and to solve simple mathematical problems using control structures. The derived data types like arrays, strings, various operations on them. Modular programming using functions and Memory management using pointers. User defined structures and various operations on it. The basics of files and its I/O operations.

COURSE OUTCOMES (COS): At the end of the course, the student will be able to :

CO1: Familiar with syntax and semantics of the basic programming language constructs
CO2: Construct derived data types like arrays in solving problem.
CO3: Decompose a problem into modules and reconstruct it using various ways of user defined functions.
CO4: Define user-defined data types like structures and unions and its applications to solve Problems.
CO5: Discuss various file I/O operations and its application.

COURSE ARTICULATION MATRIX (Correlation between COs &POs, PSOs**):**

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3												1		
CO2	3												2		
CO3	3	2											2		
CO4	3	2											2		
CO5	3												2		

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight(Low), **2 -** Moderate(Medium), **3 -** Substantial (High).

BOS APPROVED TEXT BOOKS:
1. ReemaThareja, Programming in C, Oxford University Press, 2nd Edition, 2015
Reference books:
1. Jeri R.Hanly, Elliot B.Koffman, Problem Solving and Program Design in C, Pearson Publishers, 7th Edition, 2013
2. E Balagurusamy, Computer Programming, McGraw Hill Education, 8th Edition.
3. C: The Complete Reference, McGraw Hall Education,4th Edition.
4. PradeepDey, Manas Ghosh, Programming in C, Oxford University Press, 2nd Edition, 2011.
5. Stephen G.Kochan, Programming in C, Pearson Education, 3rd Edition, 2005.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT-I : Introduction to Problem solving through C-Programming, C-Programming Basics

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Fundamentals of Computers	1	11/01/2021		**TLM2**	CO1		
2.	Problem Solving through C-Programming (Problem Specification)	1	18/01/2021		**TLM4**	CO1		
3.	Algorithm/pseudo code, Flow charts with Examples	1	19/01/2021		**TLM4**	CO1		
4.	Introduction to c language - Structure of C Program	1	21/01/2021		**TLM1**	CO1		
5.	Identifiers, basic data types, Variables and Constants	1	22/01/2021		**TLM1**	CO1		
6.	Input-Output statements	1	23/01/2021		**TLM1**	CO1		
7.	A Simple C Program	1	25/01/2021		**TLM1**	CO1		
8.	Operators and Expressions	1	28/01/2021		**TLM1**	CO1		
9.	Expression Evaluation	1	29/01/2021		**TLM1**	CO1		
10.	Type Conversions - Examples	1	30/01/2021		**TLM1**	CO1		
11.	Tutorial	1	01/02/2021		**TLM3**	CO1		
12.	Conditional Statements: If, If-Else	1	02/02/2021		**TLM1**	CO1		
13.	Conditional Statements: Else-If Ladder, Nestled If	1	04/02/2021		**TLM1**	CO1		
14.	Conditional Statements: Switch statements, Break, Goto	1	05/02/2021		**TLM1**	CO1		
15.	Loops: While statement	1	06/02/2021		**TLM1**	CO1		
16.	Loops: Do-While statement	1	08/02/2021		**TLM1**	CO1		
17.	Loops: For statement, Continue	1	09/02/2021		**TLM1**	CO1		
18.	Example Programs	1	11/02/2021		**TLM3**	CO1		

No. of classes required to complete UNIT-I	18			No. of classes taken:

UNIT-II : Array and Strings

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
19.	One-Dimensional Array: Declaration, Initialization, Assignment	1	12-02-2021		**TLM2**	CO2		
20.	One-Dimensional Array: Accessing Elements	2	13-02-2021 & 15-02-2021		**TLM1**	CO2		
21.	Two- dimensional arrays, Accessing elements	2	16-02-2021 & 18-02-2021		**TLM1**	CO2		
22.	Multi-dimensional arrays, applications of arrays.	1	19-02-2021		**TLM1**	CO2		
23.	Tutorial	1	20-02-2021		**TLM3**	CO2		
24.	Strings: Declaration, Initialization, Accessing	2	22-02-2021 & 23-02-2021		**TLM1**	CO2		
25.	String Handling Functions	2	25-02-2021 & 26-02-2021		**TLM1**	CO2		
26.	Linear Search & Binary Search	1	27-02-2021		**TLM 1**			
27.	Bubble Sort	1	01-03-2021		**TLM 1**			
28.	Pre Processor Dircetives	1	02-03-2021		**TLM3**	CO2		
No. of classes required to complete UNIT-II		13			No. of classes taken:			

UNIT-III : Functions and Pointers

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
29.	Pointers: Declaration and initialization of pointer variables	1	04-03-2021		**TLM2**	CO3		
30.	Pointer Expressions, Address Arithmetic	1	05-03-2021		**TLM1**	CO3		
31.	Pointers and Arrays	1	06-03-2021		**TLM1**	CO3		
32.	Pointer and Strings	1	15-03-2021		**TLM1**	CO3		
33.	Pointer to Pointer, Pre-Processor Directives and Macros	1	16-03-2021		**TLM1**	CO3		
34.	Tutorial	1	18-03-2021		**TLM3**	CO3		
35.	Functions: Basics, categories of Functions	1	19-03-2021		**TLM2**	CO3		
36.	Parameter Passing Techniques	1	20-03-2021		**TLM1**	CO3		
37.	Arrays as Parameters, Strings as Parameters and Pointers as Parameters	1	22-03-2021		**TLM1**	CO3		

38.	Recursive Functions - Comparison with Iteration	1	23-03-2021		**TLM1**	CO3		
39.	Storage Classes	1	25-03-2021		**TLM1**	CO3		
40.	Dynamic Memory Management Functions	1	26-03-2021		**TLM1**	CO3		
41.	Command Line Arguments	1	27-03-202		**TLM1**	CO3		
42.	Programs	1	30-03-2021		**TLM3**	CO3		
No. of classes required to complete UNIT-III		14			No. of classes taken:			

UNIT-IV : Derived Types

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
43.	Structures	1	01-04-2021 02-04-2021		**TLM2**	CO4		
44.	Arrays of Structures	1	02-04-2021		**TLM1**	CO4		
45.	Structures and Functions	1	03-04-2021		**TLM1**	CO4		
46.	Pointers to structures	1	06-04-2021		**TLM1**	CO4		
47.	Self-referential structures	1	08-04-2021		**TLM1**	CO4		
48.	Unions	1	09-04-2021		**TLM1**	CO4		
49.	Typedef	1	10-04-2021		**TLM1**	CO4		
50.	Programs on Structures	1	12-04-2021		**TLM3**	CO4		
No. of classes required to complete UNIT-IV		11			No. of classes taken:			

UNIT-V : Files

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
51.	File Concept, text files, reading & writing	1	15-04-201		**TLM2**	CO5		
52.	binary files, modes of operation	1	16-04-2021		**TLM1**	CO5		
53.	Standard I/O operations	1	17-04-2021		**TLM1**	CO5		
54.	Formatted I/O operations	1	19-04-2021		**TLM1**	CO5		
55.	File I/O operations	1	20-04-2021		**TLM1**	CO5		
56.	Error handling functions	1	22-04-2021		**TLM2**	CO5		
57.	Programs on file creation	1	23-04-2021		**TLM1**	CO5		
58.	File Programs	1	24-04-2021		**TLM3**	CO5		
No. of classes required to complete UNIT-V		08			No. of classes taken:			

Contents beyond the Syllabus

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly

59.	Enum data type	1			**TLM4**			
60.	Types of Recursion	1			**TLM4**			

Teaching Learning Methods					
TLM1	Chalk and Talk	**TLM4**	Problem Solving	**TLM7**	Seminars or GD
TLM2	PPT	**TLM5**	Programming	**TLM8**	Lab Demo
TLM3	Tutorial	**TLM6**	Assignment and Quiz	**TLM9**	Case Study

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	11-01-2021	06-03-2021	8
I Mid Examinations	08-03-2021	13-03-2021	1
II Phase of Instructions	15-03-2021	01-05-2021	7
II Mid Examinations	26-04-2021	04-01-2021	1
Preparation and Practical's	03-05-2021	08-05-2021	1
Semester End Examinations	10-03-2021	22-05-2021	2

PART-C

EVALUATION PROCESS:

Evaluation Task	Marks
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II & UNIT-III (Half of the Syllabus))	M1=15
I-Quiz Examination (Units-I, II & UNIT-III (Half of the Syllabus))	Q1=10
Assignment-II (Unit-III (Remaining Half of the Syllabus), IV & V)	A2=5
II- Descriptive Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	M2=15
II-Quiz Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	Q2=10
Mid Marks =80% of Max ((M1+Q1+A1), (M2+Q2+A2)) + 20% of Min ((M1+Q1+A1), (M2+Q2+A2))	M=30
Cumulative Internal Examination (CIE): M	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	100

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO 1	**Programming Paradigms:** The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 2	**Data Engineering:** To inculcate an ability to analyze, design and implement database applications.
PSO 3	**Software Engineering:** The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.

Title	**Course Instructor**	**Course Coordinator**	**Module Coordinator**	**Head of the Department**
Name of the Faculty	Mr. S.Nagarjuna Reddy	Dr. D.Jagan Mohan Reddy	Dr. D.Jagan Mohan Reddy	Dr. D. Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC & NBA (CSE, IT, ECE, EEE & ME)
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE HANDOUT

Part - A

PROGRAM : B.Tech., I-Sem., CSE – B section

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : Basic Electrical and Electronics Engineering

L-T-P STRUCTURE : 3-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : **Mr. P.SRIHARI**

COURSE COORDINATOR : **Mr. J.V.PAVAN CHAND**

COURSE EDUCATIONAL OBJECTIVES (CEOs):

This course enables student to illustrate the basics of applied electricity and electronics.

COURSE OUTCOMES (COs)

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

CO1: Apply network reduction techniques to simplify electrical circuits
CO2: Illustrate the working principle of DC machines and transformers
CO3: Understand V-I characteristics of semiconductor devices.
CO4: Illustrate the configuration of Transistors and their applications

BOS APPROVED TEXT BOOKS:

T1. A.Sudhakar and Shyammohan S Palli, Electrical Circuits, Tata McGraw-Hill, 3rd Edition.

T2. M.S.Sukhija, T.K.Nagsarkar, "Basic Electrical and Electronics Engineering", Oxford University Press, 2016 Edition.

BOS APPROVED REFERENCE BOOKS:

R1: Kothari and Nagarath, "Basic Electrical Engineering", TMH Publications, 3rd Edition.2013

R2: G.S.N.Raju, "Electronic Devices and Circuits", I.K.International.2006

Part - B
COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT-I : ELECTRICAL CIRCUIT FUNDAMENTALS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction	1	19-01-2021		TLM1	
2.	Basic definitions	1	19-01-2021		TLM1	
3.	Types of elements	1	21-01-2021		TLM1	
4.	R,L,C parameters	1	22-01-2021		TLM1	
5.	Ohm's Law, Kirchhoff's Laws	1	23-01-2021		TLM1	
6.	Series & parallel Star to delta, Delta to star	1	28-01-2021		TLM1	
7.	Source transformations	1	29-01-2021		TLM1	
8.	Mesh Analysis	1	30-01-2021		TLM1	
9.	Nodal Analysis	1	02-02-2021		TLM2	
10.	Assignment/Quiz-I	1	02-02-2021		TLM6	
11.	Problems	1	04-02-2021			
12.	Problems	1	05-02-2021			
No. of classes required to complete UNIT-I		12				

UNIT-II : AC FUNDAMENTALS and NETWORK THEOREMS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
13.	Superposition Theorem	1	06-02-2021		TLM1	
14.	Thevenin's Theorem	1	09-02-2021		TLM1	
15.	Norton's Theorem	1	09-02-2021		TLM1	
16.	Maximum Power Transfer Theorem	1	11-02-2021		TLM1	
17.	Peak, R.M.S, average and instantaneous values	1	12-02-2021		TLM1	
18.	Form factor and Peak factor for periodic waveforms Phase and Phase difference	1	13-02-2021		TLM1	
19.	Reactance, Impedance, Susceptance and Admittance	1	16-02-2021		TLM1	
20.	Real, Reactive and apparent Powers, Power factor	1	16-02-2021		TLM1	
21.	Resonance	1	18-02-2021		TLM2	
22.	Band Width & Quality Factor	1	19-02-2021		TLM1	
23.	Problems	1	20-02-2021		TLM1	
24.	Assignment/Quiz-II	1	23-02-2021		TLM6	

25.	MID-I		09-03-2021			
26.	MID-I		09-03-2021			
27.	MID-I		12-03-2021			
28.	MID-I		13-03-2021			
No. of classes required to complete UNIT-II		12				

UNIT-III : DC Machine Fundamentals and Single Phase Transformers

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
29.	Introduction to Electrical Machine	1	23-02-2021		TLM1	
30.	DC generator principle	1	25-02-2021		TLM1	
31.	constructional details	1	26-02-2021		TLM1	
32.	EMF equation	1	27-02-2021		TLM1	
33.	types of generators	1	02-03-2021		TLM1	
34.	DC motor principle, Back emf	1	02-03-2021		TLM1	
35.	types of motors motor applications	1	04-03-2021		TLM1	
36.	Principle of operation of single phase transformers	1	05-03-2021		TLM1	
37.	Construction of single phase transformers	1	06-03-2021		TLM1	
38.	EMF equation of Transformer	1	16-03-2021		TLM2	
39.	Assignment/Quiz-III	1	16-03-2021		TLM6	
40.	Problems		18-03-2021		TLM1	
No. of classes required to complete UNIT-III						

UNIT-IV : P-N Junction Diode and Zener Diode

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
41.	Introduction to Electronic Devices	1	19-03-2021		TLM1	
42.	Operation of PN junction diode	1	20-03-2021		TLM1	
43.	V-I characteristics of PN junction diode	1	23-03-2021		TLM1	
44.	Half Wave Rectifier	1	23-03-2021		TLM1	
45.	Full Wave Rectifier-Bridge type	1	25-03-2021		TLM1	
46.	Operation of Zener Diode	1	26-03-2021		TLM1	
47.	V-I characteristics of Zener Diode	1	27-03-2021		TLM1	

48.	Zener Diode as Voltage Regulator	1	30-03-2021		TLM2	
49.	Problems	1	30-03-2021		TLM1	
50.	Problems	1	01-04-2021		TLM1	
51.	Problems	1	03-04-2021		TLM1	
52.	Assignment/Quiz-4	1	06-04-2021		TLM6	
No. of classes required to complete UNIT-IV						

UNIT-V: Transistors

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
53.	Introduction and symbol of Transistor	1	06-04-2021		TLM1	
54.	Introduction and symbol of Transistor	1	08-04-2021		TLM1	
55.	Principle, Operation and Construction - Transistor	1	09-04-2021		TLM1	
56.	CB configuration	1	10-04-2021		TLM1	
57.	CB, CE configuration	1	15-04-2021		TLM1	
58.	CE configuration	1	16-04-2021		TLM1	
59.	JFET	1	17-04-2021		TLM1	
60.	JFET	1	20-04-2021		TLM1	
61.	MOSFET	1	20-04-2021		TLM1	
62.	Application of transistor as an amplifier	1	22-04-2021		TLM2	
63.	Assignment/Quiz-4	1	23-04-2021		TLM6	
64.	MID-II		26-04-2021			
65.	MID-II		28-04-2021			
66.	MID-II		29-04-2021			
67.	MID-II		30-04-2021			
68.	MID-II		01-05-2021			
No. of classes required to complete UNIT-V						

CONTENT BEYOND SYLLABUS:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods
1		1	24-04-2021		TLM2

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM2	PPT	**TLM6**	Assignment or Quiz
TLM3	Tutorial	**TLM7**	Group Discussion/Project
TLM4	Demonstration (Lab/Field Visit)		

Part - C

EVALUATION PROCESS:

Evaluation Task	Marks
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II & UNIT-III (Half of the Syllabus))	M1=15
I-Quiz Examination (Units-I, II & UNIT-III (Half of the Syllabus))	Q1=10
Assignment-II (Unit-III (Remaining Half of the Syllabus), IV & V)	A2=5
II- Descriptive Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	M2=15
II-Quiz Examination (UNIT-III (Remaining Half of the Syllabus), IV & V)	Q2=10
Mid Marks =80% of Max ((M1+Q1+A1), (M2+Q2+A2)) + 20% of Min ((M1+Q1+A1), (M2+Q2+A2))	M=30
Cumulative Internal Examination (CIE): M	30
Semester End Examination (SEE)	70
Total Marks = CIE + SEE	100

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1. Design and develop innovative products and services in the field of Electrical and Electronics Engineering and allied engineering disciplines.

PEO2. Apply the knowledge of Electrical and Electronics Engineering to solve problems of social relevance, pursue higher education and research.

PEO3. Work effectively as individuals and as team members in multidisciplinary projects.

PEO4. Engage in lifelong learning, career enhancement and adapt to changing professional and societal needs.

PROGRAMME OUTCOMES (POs)

a: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

b: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

c: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

d: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

e: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

f: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

g: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

h: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

i: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

j: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

k: Project management and finance: Demonstrate knowledge and understanding of the ring and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

l: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PSOs (Program specific Outcomes):

PSO-a: Specify, design and analyze systems that efficiently generate, transmit and distribute electrical power

PSO-b: Design and analyze electrical machines, modern drive and lighting systems

PSO-c: Specify, design, implement and test analog and embedded signal processing electronic systems

PSO-d: Design controllers for electrical and electronic systems to improve their performance.

Mr. P.SRIHARI	Mr.J.V.PAVAN CHAND	Dr.G.NAGESWARA RAO	Dr.J.SIVA VARA PRASAD
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING
(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi, NAAC Accredited with 'A' grade, Accredited by NBA, Certified by ISO 9001:2015)
L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

Part-A

PROGRAM : B.Tech. I-Sem., CSE-B

ACADEMIC YEAR : 2020-2021

COURSE NAME & CODE : ENGLISH COMMUNICATION SKILLS LAB - 20FE01

L-T-P STRUCTURE : 0-0-2

COURSE CREDITS : 1

COURSE INSTRUCTOR : Mr. B. Sreenivasa Reddy / Mr.B. Sagar

COURSE COORDINATOR : Dr.B.Samrajya Lakshmi

Pre-Requisites : Students should have fundamental knowledge in making sentences and be with readiness to speak

Course Educational Objective : Improve the proficiency of students in English with an emphasis on better communication in formal and informal situations; Develop speaking skills required for expressing their knowledge and abilities and to face interviews with confidence.

Course Outcomes : At the end of the course, the student will be able to

CO1 : Articulate English with good pronunciation.
CO2 : Manage skillfully through group discussions.
CO3 : Communicate with the people effectively.
CO4 : Collect and interpret data aptly.

Course Articulation Matrix:

Course Code	COs	Programme Outcomes												PSOs		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
17FE60	CO1				3					3	3		2			
	CO2				3					3	3		2			
	CO3				3					3	3		2			
	CO4				3					3	3		2			
	CO5				3					3	3		2			
1 = Slight (Low) 2 = Moderate (Medium) 3-Substantial(High)																

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High).

Bos Approved Lab Manual:

- Board of Editors, "ELCS Lab Manual – A Workbook of CALL and ICS Lab Activities", Orient Black Swan Pvt. Ltd., Hyderabad, 2016.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

S.No.	Activity	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	HOD Sign Weekly
1.	Introduction	2	12.01.2021		TLM4		
2.	Self Introduction	2	19.01.2021		TLM4	CO3	
3.	JAM- I	2	02.02.2021		TLM4	CO3	
4.	JAM-II	2	09.02.2021		TLM4	CO3	
5.	JAM-III	2	16.02.2021		TLM4	CO3	
6.	Role Play-I	2	23.02.2021		TLM4	CO3	
7.	Role Play-II	2	02.03.2021		TLM4	CO3	
I MID EXAMS : 08-03-2021 to 13-03-2021							
8.	Role Play-III	2	16.03.2021		TLM4	CO3	
9.	Data Interpretation-I	2	20.03.2021		TLM2, TLM4	CO4	
10.	Data Interpretation-II	2	30.03.2021		TLM2, TLM4	CO4	
11.	Group Discussion-I	2	06.04.2021		TLM4, TLM6	CO2	
12.	Group Discussion-II / Internal Lab Exam	2	20.04.2021		TLM4, TLM6	CO2	
13.	Total	24					

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

Part - C

EVALUATION PROCESS:

According to Academic Regulations of R17 Distribution and Weightage of Marks For Laboratory Courses is as follows.

(a) Continuous Internal Evaluation (CIE):

- ✓ The continuous internal evaluation for laboratory courses (including Computer aided engineering drawing, computer aided engineering graphics, Computer aided machine drawing etc.) is based on the following parameters:

Parameter		Marks
Day – to – Day Work	Observation	05 MARKS
	Record	
Internal Test		05 Marks
Viva – Voce During Regular Lab Sessions		05 Marks
Total		**15 Marks**

(b) Semester End Examinations (SEE):

- ✓ The performance of the student in laboratory courses shall be evaluated jointly by internal and external examiners for 3 hours duration as per the parameters indicated below:

Parameter	Marks
Phonemes	05 Marks
Short answers on phonetics	05 Marks
Transcription	05 Marks
Dialogue writing	05 Marks
Presentation	10 Marks
Interview	05 Marks
Total	**35 Marks**

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Mr. B. Sreenivasa Reddy	Prof.B.Samrajya Lakshmi	Prof.B.Samrajya Lakshmi	Prof.A.Rami Reddy
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi, NAAC Accredited with 'A' grade, Certified by ISO 9001:2015)
L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

PROGRAM : B.Tech., I-Sem. B/SEC

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : PROGRAMMING FOR PROBLEM SOLVING USING C LAB – 20CS51

L-T-P STRUCTURE : **3**-0-0

COURSE CREDITS : 1

COURSE INSTRUCTOR : Mr. S.NAGARJUNA REDDY

COURSE COORDINATOR : Dr. D. JAGAN MOHAN REDDY

PRE-REQUISITE: NIL

COURSE OBJECTIVE:

The objective of the course is to learn the basic elements of C Programming Structures like Data Types, Expressions, Control Statements, and Various I/O Functions and to solve simple mathematical problems using control structures. Design and implementation of various software components, which solve real world problems.

COURSE OUTCOMES (CO):

CO1: Apply control structures of C in solving computational problems

CO2: Implement derived datatypes & use modular programming in problem solving

CO3: : Implement user defined datatypes and perform file operations

CO4: Improve individual / teamwork skills, communication & report writing skills with ethical values.

COURSE ARTICULATION MATRIX (Correlation between Cos, Pos & PSOs):

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	2											2		
CO2	3	2											3		
CO3	3	2											3		
CO4								2	2	2					

Note: 1- Slight (Low), **2 -** Moderate (Medium), **3 -** Substantial (High)

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	HOD Sign
1.	Module - I	3	20-01-2021		
2.	Module – 2	3	27-01-2021		
3.	Module – 3	3	03-02-2021		
4.	Module – 4	3	10-02-2021		
5.	Module – 5	3	17-02-2021		
6.	Module – 6	3	24-02-2021		
7.	Module – 7	3	03-03-2021		
8.	Module – 7	3	17-03-2021		
9.	Module – 8	3	24-03-2021		
10.	Module -9	3	31-03-2021		
11.	Module 10	3	07-04-2021		
12.	***LAB INTERNAL EXAM***	3	***31-04-2021***		

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO 1	**Programming Paradigms:** The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 2	**Data Engineering:** To inculcate an ability to analyze, design and implement database applications.
PSO 3	**Software Engineering:** The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.

Title	**Course Instructor**	**Course Coordinator**	**Module Coordinator**	**Head of the Department**
Name of the Faculty	Mr. S.Nagarjuna Reddy	Dr. D.Jagan Mohan Reddy	Dr. D.Jagan Mohan Reddy	Dr. D. Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)
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Approved by AICTE, New Delhi. and Affiliated to JNTUK, Kakinada
L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.
http://cse.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor :A.RAJAGOPAL
Course Name & Code : IT WORKSHOP LAB
L-T-P Structure :0-0-3 Credits:1
Program/Sem/Sec : B.Tech., CSE, I-Sem., Section – BA.Y : 2020 - 2021

PRE-REQUISITE: NIL

COURSE OBJECTIVE: The objective of the course is to impart knowledge about the components of PC, Assembling PC, Installation of OS, softwares like MS-Office, LaTex and concepts related to Networking, Internet as well as antivirus.

COURSE OUTCOMES (COs)

At the end of the course, the student will be able to:

CO1	Identify the basic hardware components, keyboard shortcuts, assembling and disassembling of the system (PC).
CO2	Demonstrate Operating System installation, apply various commands of linux operating system, networking.
CO3	Create web pages using HTML, documents using applications like LaTeX, Google forms anduse application software packages: MS-Word, MS-Excel, MS-Power Point to create documents and presentation.
CO4	Improve individual / teamwork skills, communication & report writing skills with ethical values.

COURSE ARTICULATION MATRIX(Correlation between COs, POs & PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CO3	3	-	-	-	3	-	-	-	-	-	-	-	-	1	-
CO4	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High).

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

S.No.	Programs to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Identifying the peripheral components of a computer. Understanding the Block diagram of the CPU	3	21/01/2021		TLM2/ TLM4	
2.	Disassembling and assembling the PC back to working condition	3	28/01/2021		TLM2/ TLM4	
3.	1.Installation of MS WINDOWS and LINUX on personal computer. 2. Linux Operating System commands	3	04/02/2021		TLM2/ TLM4	
4.	Working on Networking Commands	3	11/02/2021		TLM2/ TLM4	
5.	Working on Internet Services	3	18/02/2021		TLM2/ TLM4	
6.	Introduction to HTML and its tags. Preparing a simple website/homepage.	3	25/02/2021		TLM2/ TLM4	
7.	Demonstration and Practice of Text Editors	3	04/03/2021		TLM2/ TLM4	
8.	Demonstration and practice of Microsoft Word, Power Point, Microsoft Excel	3	18/03/2021		TLM2/ TLM4	
9.	Demonstration and practice of LaTeX	3	25/03/2021		TLM2/ TLM4	
10.	Creating online documents using Google docs. Creating and sharing online quiz exam with marks/Grads	3	01/04/2021		TLM2/ TLM4	
11.	Creating and sharing Bio-data form.	3	15/04/2021		TLM2/ TLM4	
12.	Lab Internal Exam	3	22/04/2021			

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
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PROGRAMME SPECIFIC OUTCOMES (PSOs):

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PSO 2	**Data Engineering:** To inculcate an ability to analyze, design and implement database applications.
PSO 3	**Software Engineering:** The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.

Course Instructor	Course Coordinator	Module Coordinator	HOD
A.RAJAGOPAL	B S R KRISHNA	DR. D.VEERAIAH	DR. D.VEERAIAH

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

Part-A

PROGRAM : B. Tech. I-Sem.; CSE

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : Professional Communication - I (17FE01)

L-T-P STRUCTURE : 3-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr.B Sagar

COURSE COORDINATOR: Dr. B. Samrajya Lakshmi

Pre-requisites : Basics in English Grammar & Vocabulary

Course Educational Objective (CEOs) : Improve the proficiency of students in English with an emphasis on Vocabulary& Grammar for better communication in formal and informal situations; Develop listening skills required for thorough understanding and analysis to face interviews with confidence.

Course Outcomes (COs): At the end of the course, the student will be able to

CO1 : Use English vocabulary & grammar effectively while speaking and writing.
CO2 : Comprehend the given texts and Communicate confidently in formal and informal contexts.
CO3 : Draft E-mails& Memos
CO4 : Understand the written and spoken information thoroughly.
CO5 : Face interviews with confidence.

Course Articulation Matrix:

Course Code	COs	Programme Outcomes												PSOs		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
17FE01	CO1				2					3	3		2			
	CO2		1		2		1			3	3		2			
	CO3				2					3	3		2			
	CO4		1		2		1			3	3		2			
	CO5				2					3	3		2			
1 = Slight (Low) 2 = Moderate (Medium) 3-Substantial(High)																

BOS APPROVED TEXT BOOKS:

T1	Board of Editors, "Fluency in English – A Course book for Engineering Students", Orient Black Swan, Hyderabad, 2016.
T2	Dhanavel S.P, "English and Soft Skills", Orient Black Swan, Hyderabad, 2010.

BOS APPROVED REFERENCE BOOKS:

R1	Murphy, "English Grammar with CD", Cambridge University Press, New Delhi, 2004.
R2	Rizvi Ashraf M., "Effective Technical Communication", Tata Mc Graw Hill, New Delhi, 2008.
R3	Baradwaj Kumkum, "Professional Communication", I.K.International Publishing House Pvt.Lt., New Delhi, 2008.
R4	Raman, Meenakshi; Sharma, Sangeeta,. "Technical Communication -Principles and Practice" Oxford University Press, New Delhi, Third Edition. 2015.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-A/B/C

UNIT-I :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to UNIT-I	1	11-01-2021		TLM1			
2.	Proposal to Girdle The Earth by Nellie Bly	1	18-01-2021		TLM1	CO1	T1	
3.	Skimming for main idea ; Scanning for specific information	1	21-01-2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	
4.	Content words and Function words	1	22-01-2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	
5.	Word forms – verbs; Adjectives & adverbs	1	25-01-2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	
6.	Nouns – countable &	1	28-01-2021		TLM1, TLM2, TLM5	CO1	T1,R1,R3	

	uncountable, singular and plural nouns							
7.	Word order in sentences, "Wh" questions	1	29-01-2021		TLM1	CO1	T1	
8.	Paragraph writing, Paragraph analysis	1	01-02-2021		TLM1, TLM2	CO1	T1,R2,R4	
9.	Punctuation & Capital letters	1	04-02-2021		TLM1, TLM2, TLM5, TLM6	CO1	T2,R2,R4	
No. of classes required to complete UNIT-I :					No. of classes taken:			

UNIT-II :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
10.	The District School As It Way by One Who Went to it - Warren Burton	1	05-02-2021		TLM1, TLM6	CO2	T2	
11.	Identifying sequence of ideas	1	08-02-2021		TLM1, TLM6	CO2	T2,R2,R4	
12.	Cohesive devices: linkers /signposts/transition signals	1	11-02-2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
13.	Cohesive devices: linkers /signposts/transition signals	1	12-02-2021		TLM1, TLM6	CO2	T2	
14.	Synonyms meanings of words / Phrases in the context	1	15-02-2021		TLM1, TLM6	CO2	T2,R2,R4	

15.	Synonyms meanings of words / Phrases in the context	1	18-02-2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
16.	Memo drafting	2	19-02-2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
17.	Memo drafting	2	22-02-2021		TLM1, TLM2, TLM5, TLM6	CO2	T2,R2,R4	
No. of classes required to complete UNIT-II :					No. of classes taken:			

UNIT-III :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
18.	The Future of Work	1	25-02-21		TLM1	CO3	T1	
19.	Making basic inferences, Strategies to uses text clues for comprehension	1	26-02-21		TLM1, TLM2, TLM5, TLM6	CO3	T1,R2, R4	
20.	Verbs :tenses, reporting verbs for academic purpose	1	01-03-221		TLM1, TLM2, TLM5, TLM6	CO3	T1,R1, R3	
21.	Summarizing rephrasing what is read	1	04-03-21		TLM1, TLM2, TLM5, TLM6	CO3	T1,R1, R3	
22.	avoiding redundancies and repetitions	1	05-03-21		TLM1, TLM2, TLM5, TLM6	CO3	T1,R1, R3	
23.	avoiding redundancies and repetitions	1	05-03-21		TLM1, TLM6	CO3	T1	
24.	avoiding redundancies and	1	05-03-21		TLM1, TLM2, TLM5, TLM6	CO3	T1,R2, R4	

	repetitions							
No. of classes required to complete UNIT-III :					No. of classes taken:			

UNIT-IV :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
25.	APJ Abdul Kalam	3	18-03-21 19-03-21 22-03-21		TLM1, TLM6	CO4	T2	
26.	Direct-Indirect speech	2	25-03-21 26-03-21		TLM1, TLM6	CO4	T2,R2,R4	
27.	Articles and their omission	1	01-04-21		TLM1, TLM2,	CO4	T2,R1,R3	
28.	E-mail drafting	1	08-04-21		TLM1, TLM2,	CO4	T2,R1,R3	
No. of classes required to complete UNIT-IV :					No. of classes taken:			

UNIT-V :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
29	C.V.Raman	1	09-04-21		TLM1, TLM6	CO5	T2	
30	Subject – Verb agreement	1	12-04-21		TLM1, TLM6	CO5	T2,R2,R4	
31	Prepositions	1	15-04-21		TLM1, TLM6	CO5	T2,R2,R4	
32	Formal Letter Writing	1	16-04-21		TLM1, TLM2, TLM5, TLM6	CO5	T2,R2,R4	
33	Verbal Reasoning	1	19-04-21		TLM1, TLM2, TLM5, TLM6	CO1 & CO5	Book of Reasoning by Agarwal	
No. of classes required to complete UNIT-V :					No. of classes taken:			

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

Part - C

EVALUATION PROCESS:

Evaluation Task	Units	Marks
Assignment– 1	1	A1=5
Assignment– 2	2	A2=5
I-Mid Examination	1,2	B1=20
Online Quiz-1	1,2	C1=10
Assignment– 3	3	A3=5
Assignment– 4	4	A4=5
Assignment– 5	5	A5=5
II-Mid Examination	3,4,5	B2=20
Online Quiz-2	3,4,5	C2=10
Evaluation of Assignment: A=Avg(Best of Four(A1,A2,A3,A4,A5))	1,2,3,4,5	A=5
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=20
Evaluation of Online Quiz Marks: C=75% of Max(C1,C2)+25% of Min(C1,C	1,2,3,4,5	C=10
Attendance Marks based on Percentage of attendance		D=5
Cumulative Internal Examination : A+B+C+D	**1,2,3,4,5**	**40**
Semester End Examinations : E	**1,2,3,4,5**	**60**
Total Marks: A+B+C+D+E	**1,2,3,4,5**	**100**

PROGRAM OUTCOMES

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess

societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Mr. B.Sagar	**Prof. B. Samrajya Lakshmi**	**Prof. B.Samrajya Lakshmi**	**Prof. A. Ramireddy**
Course Instructor	**Course Coordinator**	**Module Coordinator**	**HOD**

COURSE HANDOUT

Part-A

PROGRAM : I B. Tech., I-Sem., CSE C
ACADEMIC YEAR : 2020-21
COURSE NAME & CODE : Differential Equations
L-T-P STRUCTURE : 3-2-0
COURSE CREDITS : 4
COURSE INSTRUCTOR : D. VIJAY KUMAR
COURSE COORDINATOR : Dr. A. Rami Reddy
PRE-REQUISITES : None

COURSE EDUCATIONAL OBJECTIVES (CEOs): The objective of this course is to introduce the first order and higher order differential equations, functions of several variables. The students will also learn solving of first order partial differential equations.

COURSE OUTCOMES (COs)

After completion of the course, the student will be able to

CO1: Apply first order and first degree differential equations to find orthogonal trajectories.

CO2: Distinguish between the structure and methodology of solving higher order differential equations with constant coefficients.

CO3: Apply various Numerical methods to solve initial value problem.

CO4: Generate the infinite series for continuous functions and investigate the functional dependence.

CO5: Solve partial differential equations using Lagrange's method.

COURSE ARTICULATION MATRIX (Correlation between Cos &POs, PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	-	2	-	-	-	-	-	-	-	1
CO2	3	2	-	2	-	-	-	-	-	-	-	1
CO3	3	2	-	2	-	-	-	-	-	-	-	1
CO4	2	1	-	1	-	-	-	-	-	-	-	1
CO5	3	2	-	2	-	-	-	-	-	-	-	1

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2** – Moderate (Medium), **3** - Substantial (High).

BOS APPROVED TEXT BOOKS:

T1 Dr. B.S. Grewal, "Higher Engineering Mathematics", 42nd Edition, Khanna Publishers, New Delhi, 2012.

T2 Dr. B. V. Ramana, "Higher Engineering Mathematics", 1st Edition, TMH, New Delhi, 2010.

BOS APPROVED REFERENCE BOOKS:

R1 M. D. Greenberg, "*Advanced Engineering Mathematics*", 2nd Edition, TMH Publications, New Delhi, 2011.

R2 Erwin Kreyszig, *"Advanced Engineering Mathematics"*, 8th Edition, John Wiley & sons, New Delhi, 2011.

R3 W.E. Boyce and R. C. Diprima, " *Elementary Differential Equations"* , 7th Edition, John Wiley & sons, New Delhi,2011.

R4 S. S. Sastry, *" Introductory Methods of Numerical Analysis"* 5th Edition, PHI Learning Private Limited, New Delhi, 2012.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN):

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to the course, Course Outcomes	1	19/01/2021	18/01/2021	TLM1			

UNIT-I: Differential Equations of First Order and First Degree

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
2.	Introduction to UNIT I	1	19/01/2021		TLM2	CO1	T1,T2	
3.	Formation of Differential Equations	1	20/01/2021		TLM1	CO1	T1,T2	
4.	Exact DE	1	22/01/2021		TLM1	CO1	T1,T2	
5.	Non-exact DE Type I	1	22/01/2021		TLM1	CO1	T1,T2	
6.	Non-exact DE Type II	1	23/01/2021		TLM1	CO1	T1,T2	
7.	Non-exact DE Type III	1	27/01/2021		TLM1	CO1	T1,T2	
8.	**TUTORIAL 1**	1	29/01/2021		TLM3	CO1	T1,T2	
9.	Non-exact DE Type IV	1	29/01/2021		TLM1	CO1	T1,T2	
10.	Orthogonal Trajectories (Cartesian)	1	30/01/2021		TLM1	CO1	T1,T2	
11.	Orthogonal Trajectories (polar)	1	02/02/2021		TLM1	CO1	T1,T2	
12.	Orthogonal Trajectories (polar)	1	03/02/2021		TLM1	CO1	T1,T2	
13.	Problems	1	05/02/2021		TLM1	CO1	T1,T2	
14.	**TUTORIAL 2**	1	05/02/2021		TLM3	CO1	T1,T2	
No. of classes required to complete UNIT-I		13			No. of classes taken:			

UNIT-II: Higher Order Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Introduction to UNIT II	1	06/02/2021		TLM2	CO2	T1,T2	
16.	Solving a homogeneous DE	1	09/02/2021		TLM1	CO2	T1,T2	
17.	Finding Particular Integral, P.I for e^{ax+b}	1	10/02/2021		TLM1	CO2	T1,T2	
18.	P.I for Cos bx, or sin bx	1	12/02/2021		TLM1	CO2	T1,T2	
19.	P.I for polynomial function	1	12/02/2021		TLM1	CO2	T1,T2	
20.	P.I for $e^{ax+b}v(x)$	1	17/02/2021		TLM1	CO2	T1,T2	
21.	P.I for $e^{ax+b}v(x)$	1	19/02/2021		TLM1	CO2	T1,T2	
22.	P.I for $x^k v(x)$	1	19/02/2021		TLM1	CO2	T1,T2	
23.	Method of Variation of parameters	1	20/02/2021		TLM1	CO2	T1,T2	
24.	**TUTORIAL 3**	1	23/02/2021		TLM3	CO2	T1,T2	

25.	Method of Variation of parameters	1	24/02/2021		TLM1	CO2	T1,T2	
26.	**TUTORIAL 4**	1	26/02/2021		TLM3	CO2	T1,T2	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III: Numerical solution of Ordinary Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
27.	Introduction to Unit-III	1	26/02/2021		TLM2	CO3	T1,T2	
28.	Solution by Taylor's series	1	27/02/2021		TLM1	CO3	T1,T2	
29.	Solution by Taylor's series	1	02/03/2021		TLM1	CO3	T1,T2	
30.	Picard's Method	1	03/03/2021		TLM1	CO3	T1,T2	
31.	Picard's Method	1	06/03/2021		TLM1	CO3	T1,T2	
I MID EXAMINATIONS (08-03-2021 TO 15-03-2021)								
32.	Euler's Method	1	16/03/2021		TLM1	CO3	T1,T2	
33.	Modified Euler's Method	1	17/03/2021		TLM1	CO3	T1,T2	
34.	Runge- Kutta Method	1	19/03/2021		TLM1	CO3	T1,T2	
35.	**TUTORIAL 6**	1	19/03/2021		TLM3	CO3	T1,T2	
No. of classes required to complete UNIT-III		9			No. of classes taken:			

UNIT-IV: Functions of Several Variables

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
36.	Introduction to UNIT IV	1	20/03/2021		TLM1	CO4	T1,T2	
37.	Generalized Mean Value Theorem, Taylor's series	1	23/03/2021		TLM1	CO4	T1,T2	
38.	Maclaurin's series	1	24/03/2021		TLM1	CO4	T1,T2	
39.	Functions of several variables	1	27/03/2021		TLM1	CO4	T1,T2	
40.	Jacobians (polar, cylindrical, spherical coordinates)	1	30/03/2021		TLM1	CO4	T1,T2	
41.	Functional dependence	1	31/03/2021		TLM1	CO4	T1,T2	
42.	**TUTORIAL 7**	1	03/04/2021		TLM3	CO4	T1,T2	
43.	Maxima and Minima of functions of two variables	1	06/04/2021		TLM1	CO4	T1,T2	
44.	Maxima and Minima of functions of two variables	1	07/04/2021		TLM1	CO4	T1,T2	
45.	**TUTORIAL 8**	1	09/04/2021		TLM3	CO4	T1,T2	
No. of classes required to complete UNIT-IV		10			No. of classes taken:			

UNIT-V: Partial Differential Equations

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
46.	Introduction to UNIT V	1	09/04/2021		TLM1	CO5	T1,T2	
47.	Formation of PDE by	1	10/04/2021		TLM1	CO5	T1,T2	

	elimination of arbitrary constants							
48.	Formation of PDE by elimination of arbitrary functions	1	16/04/2021		TLM1	CO5	T1,T2	
49.	Formation of PDE by elimination of arbitrary functions	1	16/04/2021		TLM1	CO5	T1,T2	
50.	**TUTORIAL 9**	1	17/04/2021		TLM3	CO5	T1,T2	
51.	Solving of PDE	1	20/04/2021		TLM1	CO5	T1,T2	
52.	Lagrange's Method	1	23/04/2021		TLM1	CO5	T1,T2	
53.	Lagrange's Method	1	23/04/2021		TLM1	CO5	T1,T2	
54.	**TUTORIAL 10**	1	24/04/2021		TLM1	CO5	T1,T2	
No. of classes required to complete UNIT-V		9			No. of classes taken:			

Contents beyond the Syllabus

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
55.	Solving of PDE other methods	1	24/04/2021		TLM5	CO5	T1,T2	
No. of classes		1			No. of classes taken:			
II MID EXAMINATIONS (26-04-2021 TO 30-04-2021)								

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM2	PPT	**TLM6**	Assignment or Quiz
TLM3	Tutorial	**TLM7**	Group Discussion/Project
TLM4	Demonstration (Lab/Field Visit)		

Part - C

EVALUATION PROCESS:

Evaluation Task	**Units**	**Marks**
Assignment– 1	1	A1=5
Assignment– 2	2	A2=5
I-Mid Examination	1,2,3.5	B1=18
Objective Questions-1	1,2,3.5	C1=7
Assignment– 3	3	A3=5
Assignment– 4	4	A4=5
Assignment– 5	5	A5=5
II-Mid Examination	3,4,5	B2=18
Online Quiz-2	3,4,5	C2=7
Evaluation of Assignment: A=Avg (Best of Four(A1,A2,A3,A4,A5))	1,2,3,4,5	A=5
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=18
Evaluation of Objective Questions Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4,5	C=7
Cumulative Internal Examination : A+B+C	**1,2,3,4,5**	**30**
Semester End Examinations : D	**1,2,3,4,5**	**70**
Total Marks: A+B+C+D	**1,2,3,4,5**	**100**

D. Vijay Kumar	**Dr. A. RAMI REDDY**	**Dr. A. RAMI REDDY**	**Dr. A. RAMI REDDY**
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC & NBA (Under Tier - I) ISO 9001:2015 Certified Institution

Approved by AICTE, New Delhi. and Affiliated to JNTUK, Kakinada

L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.

http://cse.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

Part-A

PROGRAM : B. Tech., I-Sem., CSE-C

ACADEMIC YEAR : 2020-2021

COURSE NAME & CODE : Applied Physics- 17FE12

L-T-P STRUCTURE : 4-1-0

COURSE CREDITS : 4

COURSE INSTRUCTOR : **Dr. P.V.N. Kishore**

COURSE COORDINATOR : **Dr. S. YUSUB**

PRE-REQUISITE: Basics in Light, Conductivity in different solid materials etc.

COURSE EDUCATIONAL OBJECTIVES(CEOs) : To make students learn the basic concepts of Optics such as Interference, Diffraction, Polarization and Lasers; the principle of quantum mechanics, free electron theory of metals, Concept of semi conductors, diodes and different types of polarizations in dielectrics and their applications.

Course Outcomes: At the end of the course, the student will be able to:

Co1: Define the nature of Interference and Diffraction.
Co2: Describe the polarization and LASER, types of lasers and their applications.
Co3: Estimate the electrical conductivity in metals.
Co4: Design the circuits of semiconductor diodes, LED, Photodiode, Solar cell.
Co5: Classify the different types of polarisations in dielectric materials.

COURSE ARTICULATION MATRIX (Correlation between COs& POs, PSOs):

APPLIED PHYSICS												
COURSE DESIGNED BY	**FRESHMAN ENGINEERING DEPARTMENT**											
Course Outcomes	**Programme Outcomes**											
PO's →	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO1.	**3**	**3**	**1**	**1**								**1**
CO2.	**3**	**3**	**2**	**1**								**1**
CO3.	**3**	**3**	**1**	**1**								**1**
CO4.	**3**	**3**	**1**	**1**								**1**
CO5.	**3**	**3**	**1**	**1**								**1**
CATEGORY	**BASIC SCIENCES**											

APPROVAL	**APPROVED BY ACADEMIC COUNCIL, 2017.**

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High).

BOS APPROVED TEXT BOOKS:

T1 V. Rajendran, "*Engineering Physics*", TMH, New Delhi, 6th Edition, 2013.

T2 D. K.Bhattacharya, Poonam Tandon, " Applied *Physics*", Oxford press, New Delhi, 1st Edition, 2016.

BOS APPROVED REFERENCE BOOKS:

R1 M.N. Avadhanulu, TVS Arun Murthy, "Applied *Physics*", S. Chand & Co., 2nd Edition, 2007.

R2 P.K. Palani Samy, "*Applied Physics*", Sci. Publ. Chennai, 4th Edition, 2016.

R3 P. Sreenivasa Rao, K Muralidhar, "*Applied Physics*", Him. Publi. Mumbai, 1st Edition, 2016.

R4 Hitendra K Mallik , AK Singh " *Engineering Physics*", TMH, New Delhi, 1st Edition, 2009.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): ECE-B

UNIT-I : Interference and diffraction

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	18-01-2021		TLM1	CO1	T1	
2.	Course Outcomes	1	18-01-2021		TLM1	CO1	T1	
3.	Introduction to UNIT-I INTERFERENCE	1	19-01-2021		TLM1	CO1	T1	
4.	Coherence, Conditions	1	20-01-2021		TLM1	CO1	T1	
5.	Thin films, parallel film	1	21-01-2021		TLM1	CO1	T1	
6.	Newton's rings	1	22-01-2021		TLM1	CO1	T1	
7.	Newton's rings	1	23-01-2021		TLM1	CO1	T1	
8.	Michelson interferometer	1	25-01-2021		TLM1	CO1	T1	
9.	Tutorial-1	1	27-01-2021		TLM3		T1	
10.	Introduction Diffraction	1	28-01-2021		TLM1	CO1	T1	
11.	Fraunhofer diffraction Single slit	1	**29-01-2021**		TLM1	CO1	T1	

12.	Circular aperture	1	29-01-2021		TLM1	CO1	T1	
13.	Diffraction due to N-Slits	1	30-01-2021		TLM1	CO1	T1	
14.	Diffraction Grating	1	30-01-2021		TLM1	CO1	T1	
15.	Resolving power of Grating	1	01-02-2021		TLM3	CO1	T1	
16.	Applications of Diffraction	1	2-02-2021		TLM1	CO1	T1	
17.	Assignment/Quiz	1	03-02-2021		TLM6		T1	
18.	Tutorial-2	1	03-02-2021		TLM3		T1	
No. of classes required to complete UNIT-I		17			No. of classes taken:			

UNIT-II : Fiber optics and Lasers

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
19.	Introduction to Optical fiber and concept of total internal reflection	1	04-02-2021		TLM1	CO2	T1	
20.	Types of fibers	1	05-02-2021		TLM1	CO2	T1	
21.	Propagation of light in different fibers	1	05-02-2021		TLM1	CO2	T1	
22.	Derivation for Acceptance angle and Numerical aperture	1	06-02-2021		TLM1	CO2	T1	
23.	Applications of fibers	1	06-02-2021		TLM1	CO2	T1	
24.	Tutorial-3	1	08-02-2021		TLM3		T1	
25.	Characteristics of Laser.	1	09-02-2021		TLM1	CO2	T1	
26.	Einstein's coefficients	1	10-02-2021		TLM1	CO2	T1	
27.	NdYAG laser	1	10-02-2021		TLM1	CO2	T1	
28.	He-Ne laser	1	11-02-2021		TLM1	CO2	T1	
29.	Tutorial-4	1	11-02-2021		TLM3		T1	
30.	He-Ne laser	1	12-02-2021		TLM1	CO2	T1	

31.	Applications of lasers	1	12-02-2021		TLM1	CO2	T1	
32.	Applications of lasers	1	15-02-2021		TLM1	CO2	T1	
33.	Assignment/Quiz	1	15-02-2021		TLM6	CO2	T1	
34.	Tutorial-5	1	16-02-2021		TLM3	CO2	T1	
No. of classes required to complete UNIT-II		16			No. of classes taken:			

UNIT-III : PRINCIPLES OF QUANTUM MECHANICS & FREE ELECTRON THEORY

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
35	Introduction to Unit III, de-Broglie hypothesis	1	**17-02-2021**		TLM1	CO3	T1	
36	Broglie waves,	1	18-02-2021		TLM1	CO3	T1	
37	Expt. Verification,	1	18-02-2021		TLM1	CO3	T1	
38	Tutorial-6	1	19-02-2021		TLM3	CO3	T1	
39	Schrodinger wave equation,	1	**20-02-2021**		TLM1	CO3	T1	
40	physical significance of the wave function	1	20-02-2021		TLM1	CO3	T1	
41	particle in a box,	1	22-02-2021		TLM1	CO3	T1	
42	Classical free electron theory- Postulates	1	23-02-2021		TLM1	CO3	T1	
43	Expression for electrical conductivity and drift velocity,	1	24-02-2021		TLM1	CO3	T1	
44	Advantages and Draw backs,	1	24-04-2020		TLM1	CO3	T1	
45	Fermi-Dirac statistics,	1	24-02-2021		TLM1	CO3	T1	
46	TUTORIAL-7	1	25-02-2021		TLM3	CO3	T1	
47	Classification of Solids on the basis of Band theory.	1	26-02-2021		TLM1	CO3	T1	
48	Classification of Solids on the basis of Band theory.	1	27-02-2021		TLM1	CO3	T1	
49	Assignment/Quiz	1	27-02-2021		TLM6	CO3	T1	
50	**I MID**		01-03-2021			CO1,		

						CO2		
51	**I MID**		02-03-2021			CO1, CO2		
52	**I MID**		03-03-2021			CO1, CO2		
53	**I MID**		04-03-2021			CO1, CO2		
54	**I MID**		05-03-2021			CO1, CO2		
No. of classes required to complete UNIT-III		15		No. of classes taken:				

UNIT-IV : SEMI CONDUCTOR PHYSICS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
55.	Introduction to unit IV,	1	06-03-2021		TLM1	CO4	T1	
56.	TUTORIAL-8	1	08-03-2021		TLM3	CO4	T1	
57.	Carrier concentration in n-type semiconductor	1	09-03-2021		TLM1	CO4	T1	
58.	Carrier concentration in p-type semiconductor	1	10-03-2021			CO4	T1	
59.	Conductivity of Intrinsic and Extrinsic semiconductors, Drift and diffusion Einstein relation,	1	12-03-2021		TLM1	CO4	T1	
60.	Drift and diffusion Einstein relation,	1	15-03-2021		TLM1	CO4	T1	
61.	Tutorial-9	1	16-03-2021		TLM3	CO4	T1	
62.	Hall effect, Photo detector, Solar cell,	1	17-03-2021		TLM1	CO4	T1	
63.	Tutorial-10	1	18-03-2021		TLM3	CO4	T1	
64.	Applications of solar cells	1	19-03-2021		TLM1	CO4	T1	
65.	Direct and indirect band gap	1	20-03-2021		TLM1	CO4	T1	

	semiconductors, LED							
66.	Assignment/Quiz	1	22-03-2021		TLM6		T1	
67.	Tutorial-11	1	23-03-2021		TLM3		T1	
No. of classes required to complete UNIT-IV		13			No. of classes taken:			

UNIT-V : DIELECTRIC MATERIALS & MAGNETISM

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
68.	Introduction to unit V Dielectric materials	1	24-03-2021		TLM1	CO5	T1	
69.	Dielectric polarization Electronic polarization	1	25-03-2021		TLM1	CO5	T1	
70.	Ionic polarizationOrientation	1	26-03-2021		TLM1		T1	
71.	and space charge polarizations	1	27-03-2021		TLM1	CO5	T1	
72.	Tutorial-12	1	30-03-2021		TLM3		T1	
73.	Local field, Clausius-Mossitti relation	1	31-03-2021		TLM3	CO5	T1	
74.	Dieelctric loss Ferro electricity and Piezo electricity	1	01-04-2021		TLM1	CO5	T1	
75.	Dielectric breakdown strength , Appications	1	03-04-2021		TLM1	CO5	T1	
76.	Assignment/Quiz	1	06-04-2021		TLM6	CO5	T1	
77.	Tutorial-13	1	07-04-2021		TLM3	CO5	T1	
78.	Magnetic parameters, Classification of magnetic materials-	1	08-04-2021		TLM1	CO5	T1	
79.	Hysteresis loop, soft and hard magnetic materials, Applications of Ferro magnetic materials	1	09-04-2021		TLM1	CO5	T1	
80.	Assignment/Quiz	1	06-04-2021		TLM6	CO5	T1	
81.	Tutorial-13	1	07-04-2021		TLM3	CO5	T1	
No. of classes required to complete UNIT-V		14			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign
82.	SEM	1	13-05-2020		TLM1		R1	
83.	Nano materials	1	01-06-2020		TLM1		R1	
75	Mid II		15-06-2020			Co3, Co4, Co5		
76	Mid II		16-06-2020			Co3, Co4, Co5		
77	Mid II		17-06-2020			Co3, Co4, Co5		
78	Mid II		18-06-2020			Co3, Co4, Co5		
79	Mid II		19-06-2020			Co3, Co4, Co5		
80	Mid II		20-06-2020			Co3, Co4, Co5		

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

Part - C

EVALUATION PROCESS:

Evaluation Task	**COs**	**Marks**
Assignment/Quiz – 1	1	A1=5
Assignment/Quiz – 2	2	A2=5
I-Mid Examination	1,2	B1=20
Assignment/Quiz – 3	3	A3=5
Assignment/Quiz – 4	4	A4=5
Assignment/Quiz – 5	5	A5=5
II-Mid Examination	3,4,5	B2=20
Evaluation of Assignment/Quiz Marks: A=(A1+A2+A3+A4+A5)/5	1,2,3,4,5	A=5
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=20
Cumulative Internal Examination : A+B	**1,2,3,4,5**	**A+B=25**
Semester End Examinations	**1,2,3,4,5**	**C=75**
Total Marks: A+B+C	**1,2,3,4,5**	**100**

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

Graduates of Information Technology programme will be:

PEO 1: Pursue a successful career in the area of Information Technology or its allied fields.
PEO 2: Exhibit sound knowledge in the fundamentals of Information Technology and apply practical experience with programming techniques to solve real world problems.
PEO 3: Able to demonstrate self-learning, life-long learning and work in teams on multidisciplinary projects.
PEO 4: Able to understand the professional code of ethics and demonstrate ethical behaviour, effective communication, team work and leadership skills in their job.

PROGRAM OUTCOMES:

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solution sin societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs):

Graduate of the Information Technology will have the ability to

1.Organize, Analyze and Interpret the data to extract meaningful conclusions.
2.Design, Implement and Evaluate a computer-based system to meet desired needs.
3. Develop IT application services with the help of different current engineering tools.

Dr. S. YUSUB	Dr T. VASANTHA RAO	Dr T. VASANTHA RAO	Dr A. RAMIREDDY
Course Instructor	Course Coordinator	Module Coordinator	HOD

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DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE HANDOUT

Part - A

PROGRAM : B.Tech., I-Sem., CSE – C section

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : Basic Electrical and Electronics Engineering

L-T-P STRUCTURE : 3-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : **Mrs. G.TABITA**

COURSE COORDINATOR : **Mr. J.V.PAVAN CHAND**

COURSE EDUCATIONAL OBJECTIVES (CEOs):

This course enables student to illustrate the basics of applied electricity and electronics.

COURSE OUTCOMES (COs)

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

CO1: Apply network reduction techniques to simplify electrical circuits
CO2: Illustrate the working principle of DC machines and transformers
CO3: Understand V-I characteristics of semiconductor devices.
CO4: Illustrate the configuration of Transistors and their applications

BOS APPROVED TEXT BOOKS:

T1. A.Sudhakar and Shyammohan S Palli, Electrical Circuits, Tata McGraw-Hill, 3rd Edition.

T2. M.S.Sukhija, T.K.Nagsarkar, "Basic Electrical and Electronics Engineering", Oxford University Press, 2016 Edition.

BOS APPROVED REFERENCE BOOKS:

R1: Kothari and Nagarath, "Basic Electrical Engineering", TMH Publications, 3rd Edition.2013

R2: G.S.N.Raju, "Electronic Devices and Circuits", I.K.International.2006

Part - B
COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I : ELECTRICAL CIRCUIT FUNDAMENTALS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction	1	11-01-2021		TLM1	
2.	Basic definitions	1	18-01-2021		TLM1	
3.	Types of elements	1	19-01-2021		TLM1	
4.	R,L,C parameters	1	21-01-2021		TLM1	
5.	Ohm‘s Law, Kirchhoff‘s Laws	1	22-01-2021		TLM1	
6.	Series & parallel Star to delta, Delta to star	1	23-01-2021		TLM1	
7.	Source transformations	1	25-01-2021		TLM1	
8.	Mesh Analysis	1	28-01-2021		TLM2	
9.	Nodal Analysis	1	29-01-2021		TLM2	
10.	Assignment/Quiz-I	1	30-01-2021		TLM6	
11.	Problems	1	01-02-2021			
12.	Problems	1	02-02-2021			
No. of classes required to complete UNIT-I		12				

UNIT-II : AC FUNDAMENTALS and NETWORK THEOREMS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
13.	Superposition Theorem	1	04-02-2021		TLM1	
14.	Thevenin’s Theorem	1	05-02-2021		TLM1	
15.	Norton’s Theorem	1	06-02-2021		TLM1	
16.	Maximum Power Transfer Theorem	1	08-02-2021		TLM1	
17.	Peak, R.M.S, average and instantaneous values	1	09-02-2021		TLM1	
18.	Form factor and Peak factor for periodic waveforms Phase and Phase difference	1	11-02-2021		TLM1	
19.	Reactance, Impedance, Susceptance and Admittance	1	12-02-2021		TLM1	
20.	Real, Reactive and apparent Powers, Power factor	1	13-02-2021		TLM1	

21.	Resonance	1	15-02-2021		TLM2	
22.	Band Width & Quality Factor	1	16-02-2021		TLM1	
23.	Problems	1	18-02-2021		TLM1	
24.	Assignment/Quiz-II	1	19-02-2021		TLM6	
25.	MID-I		08-03-2021			
26.	MID-I		10-03-2021			
27.	MID-I		12-03-2021			
28.	MID-I		13-03-2021			
No. of classes required to complete UNIT-II		12				

UNIT-III : DC Machine Fundamentals and Single Phase Transformers

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
29.	Introduction to Electrical Machine	1	20-02-2021		TLM1	
30.	DC generator principle	1	22-02-2021		TLM1	
31.	constructional details	1	23-02-2021		TLM1	
32.	EMF equation	1	25-02-2021		TLM1	
33.	types of generators	1	26-02-2021		TLM1	
34.	DC motor principle, Back emf	1	27-02-2021		TLM1	
35.	types of motors motor applications	1	01-03-2021		TLM2	
36.	Principle of operation of single phase transformers	1	02-03-2021		TLM1	
37.	Construction of single phase transformers	1	04-03-2021		TLM2	
38.	EMF equation of Transformer	1	05-03-2021		TLM2	
39.	Assignment/Quiz-III	1	06-03-2021		TLM6	
40.	Problems	1	15-03-2021		TLM1	
41.	Problems	1	16-03-2021		TLM1	
No. of classes required to complete UNIT-III		13				

UNIT-IV : P-N Junction Diode and Zener Diode

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
42.	Introduction to	1	18-03-2021		TLM1	

	Electronic Devices					
43.	Operation of PN junction diode	1	19-03-2021		TLM2	
44.	V-I characteristics of PN junction diode	1	20-03-2021		TLM2	
45.	Half Wave Rectifier	1	22-03-2021		TLM1	
46.	Full Wave Rectifier-Bridge type	1	23-03-2021		TLM1	
47.	Operation of Zener Diode	1	25-03-2021		TLM1	
48.	V-I characteristics of Zener Diode	1	26-03-2021		TLM1	
49.	Zener Diode as Voltage Regulator	1	27-03-2021		TLM2	
50.	Problems	1	30-03-2021		TLM1	
51.	Problems	1	01-04-2021		TLM1	
52.	Problems	1	03-04-2021		TLM1	
53.	Assignment/Quiz-4	1	05-04-2021		TLM6	
No. of classes required to complete UNIT-IV		12				

UNIT-V: Transistors

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
54.	Introduction and symbol of Transistor	1	06-04-2021		TLM1	
55.	Introduction and symbol of Transistor	1	08-04-2021		TLM1	
56.	Principle, Operation and Construction - Transistor	1	09-04-2021		TLM1	
57.	CB configuration	1	10-04-2021		TLM1	
58.	CB, CE configuration	1	12-04-2021		TLM1	
59.	CE configuration	1	13-04-2021		TLM2	
60.	JFET	1	15-04-2021		TLM2	
61.	JFET	1	16-04-2021		TLM2	
62.	MOSFET	1	17-04-2021		TLM1	
63.	Application of transistor as an amplifier	2	19-04-2021 20-04-2021		TLM2	
64.	Assignment/Quiz-4	1	22-04-2021		TLM6	
65.	Revision	1	23-04-2021			
66.	MID-II		26-04-2021			
67.	MID-II		27-04-2021			
68.	MID-II		29-04-2021			

69.	MID-II		30-04-2021			
No. of classes required to complete UNIT-V		13				

CONTENT BEYOND SYLLABUS:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods
1	Applications of DC Machines	1	24-04-2021		TLM2

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM2	PPT	**TLM6**	Assignment or Quiz
TLM3	Tutorial	**TLM7**	Group Discussion/Project
TLM4	Demonstration (Lab/Field Visit)		

Part - C

EVALUATION PROCESS:

Evaluation Task	COs	Marks
Assignment-1	1	A1=5
Assignment – 2	1	A2=5
I-Mid Examination	1	B1=36
Online-I	1	C1=14
Assignment – 3	2	A3=5
Assignment – 4	3	A4=5
Assignment – 5	4	A5=5
II-Mid Examination	2,3,4	B2=36
Online-II	2,3,4	C2=14
Evaluation of Assignment/Quiz Marks: A=(A1+A2+A3+A4+A5)/5	1,2,3,4	A=5
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4	B=
Evaluation of Online Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4	C=
Attendance	--	D=
Cumulative Internal Examination : A+B+C+D	**1,2,3,4**	
Semester End Examinations	**1,2,3,4**	**E=**
Total Marks: A+B+C+D+E	**1,2,3,4**	**100**

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1. Design and develop innovative products and services in the field of Electrical and Electronics Engineering and allied engineering disciplines.

PEO2. Apply the knowledge of Electrical and Electronics Engineering to solve problems of social relevance, pursue higher education and research.

PEO3. Work effectively as individuals and as team members in multidisciplinary projects.

PEO4. Engage in lifelong learning, career enhancement and adapt to changing professional and societal needs.

PROGRAMME OUTCOMES (POs)

a: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

b: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

c: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

d: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

e: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

f: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

g: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

h: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

i: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

j: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

k: Project management and finance: Demonstrate knowledge and understanding of the ring and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

l: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PSOs (Program specific Outcomes):

PSO-a: Specify, design and analyze systems that efficiently generate, transmit and distribute electrical power

PSO-b: Design and analyze electrical machines, modern drive and lighting systems

PSO-c: Specify, design, implement and test analog and embedded signal processing electronic systems

PSO-d: Design controllers for electrical and electronic systems to improve their performance.

Mrs. G.TABITA	Mr.J.V.PAVAN CHAND	Dr.G.NAGESWARA RAO	Dr.J.SIVA VARA PRASAD
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi, NAAC Accredited with 'A' grade, Certified by ISO 9001:2015)
L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

PROGRAM : B.Tech., I-Sem., CSE

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : **Programming for Problem solving using C** – 20CS51,

L-T-P STRUCTURE : 3-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr. L V Krishna Rao

COURSE COORDINATOR : Dr. D. Jagan Mohan reddy

MODULE COORDINATOR: Dr. D. Jagan Mohan reddy

PRE-REQUISITE: NIL

COURSE OBJECTIVE:

In this course, the student will learn about:

Software Development tools like algorithm, pseudo codes and programming structure. Basic elements of C Programming Structures like Data Types, Expressions, Control Statements, Various I/O Functions and how to solve simple mathematical problems using control structures. Design and Implementation of various software components which solve real world problems.

Course Outcomes (CO): *At the end of this course, the student will be able to:*

CO1: Apply control structures of C in solving computational problems.(**Apply - L3**)

CO2: Implement derived data types & use modular programming in problem solving**(Apply- L3)**

CO3: Implement user defined data types and perform file operations.**(Apply- L3)**

CO 4: Improve individual / teamwork skills, communication & report writing skills with ethical values.

COURSE ARTICULATION MATRIX (Correlation between COs, POs & PSOs):

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	2													
CO2	3	2													
CO3	3	2													
CO4								3	3	3					

Note: 1- Slight (Low), **2 -** Moderate (Medium), **3 -** Substantial (High)

COURSE DELIVERY PLAN (LESSON PLAN): Section-C

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	HOD Sign Weekly
1.	Introduction to raptor tool	3	18/01/2021		
2.	Problem solving using raptor tool	3	25/01/2021		
3.	Exercise Programs on Basics of C-Program	3	01/02/2021		
4.	Exercise Programs on Control Structures	3	08/02/2021		
5.	Exercise Programs on Loops & nesting of Loops.	3	15/02/2021		
6.	Exercise Programs on Arrays & Strings	3	22/02/2021		
7.	Exercise Programs on Pointers.	3	01/03/2021		
8.	Exercise Programs on Functions	3	22/03/2021		
9.	Exercise Programs on user defined data types.	3	12/04/2021		
10.	Exercise Programs on Files.	3	19/04/2021		

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Mr. L V Krishna Rao	Dr D Jagan Mohan reddy	Dr D Jagan Mohan reddy	Dr. D. Veeraiah
Signature				

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO I: To inculcate the adaptability skills into the students for software design, software development or any other allied fields of computing.

PEO II: To equip the graduates with the ability to analyze, design and synthesize data to create novel products.

PEO III: Ability to understand and analyze engineering issues in a broader perspective with ethical responsibility towards sustainable development.

PEO IV: To empower the student with the qualities of effective communication, team work, continues learning attitude, leadership needed for a successful computer professional.

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineer**ing and management principles and apply these to one's own work, as a member and** leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. An ability to apply softwareengineering practices and strategies in software project development using open source programming environment for the success of organization.

2. An Ability to design and develop computer programs in networking, web applications and IoT as per the society needs.

3. To inclucate an ability to analyze,design and implement database applications.

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Mr. L V Krishna Rao	Dr. D. Jagan Mohan Reddy	Dr. D. Jagan Mohan Reddy	Dr. D. Veeraiah
Signature				

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L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

FRESHMAN ENGINEERING DEPARTMENT

COURSE HANDOUT

PART-A

Name of Course Instructor : **Mr B Sagar**
Course Name & Code : **PROFESSIONAL COMMUNICATION SKILLS LAB - 20FE60**
L-T-P Structure : 2-0-0
Credits : 1
Program/Sem/Sec : B.Tech. I-Sem., CSE-C
A.Y : 2020-21

PRE-REQUISITE : Students should have fundamental knowledge in making sentences and be with readiness to speak

COURSE EDUCATIONAL OBJECTIVES (CEOs): Improve the proficiency of students in English with an emphasis on better communication in formal and informal situations; Develop speaking skills required for expressing their knowledge and abilities and to face interviews with confidence.

COURSE OUTCOMES (COs): At the end of the course, the student will be able to

CO 1	Articulate English with good pronunciation.
CO 2	Manage skillfully through group discussions.
CO 3	Communicate with the people effectively.
CO 4	Collect and interpret data aptly.

COURSE ARTICULATION MATRIX (Correlation between COs, POs & PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1					3					3	3				
CO2					3					3	3				
CO3					3					3	3				
CO4					3					3	3				

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2** – Moderate (Medium), **3** - Substantial (High).

LAB. MANUAL:

T1 Board of Editors, "ELCS Lab Manual – A Workbook of CALL and ICS Lab Activities", Orient Black Swan Pvt. Ltd., Hyderabad, 2016.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction	2	23-01-2021		TLM4	
2.	Self Introduction	2	30-01-2021		TLM4	
3.	JAM- I	2	06-02-2021		TLM4	
4.	JAM-II	2	13-02-2021		TLM4	
5.	Role Play-I	2	20-02-2021		TLM4	
6.	Role Play-II	2	06-03-2021		TLM4	
7.	Data Interpretation-I	2	20-03-2021		TLM2, TLM4	
8.	Data Interpretation-II	2	27-03-2021		TLM2, TLM4	
9.	Group Discussion-I	2	03-04-2021		TLM4, TLM6	
10.	Group Discussion-II	2	10-04-2021		TLM4, TLM6	
11.	Internal Lab Exam	2	17-04-2021			
No. of classes required to complete the syllabus:22						

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PART-C

EVALUATION PROCESS:

According to Academic Regulations of R17 Distribution and Weightage of Marks for Laboratory Courses is as follows.

(a) Continuous Internal Evaluation (CIE):

Parameter	Marks

Day – to – Day Work	Observation	05 Marks
	Record	05 Marks
Internal Test		10 Marks
Attendance		05 Marks
Viva – Voce During Regular Lab Sessions		05 Marks
Total		**30 Marks**

- ✓ The continuous internal evaluation for laboratory courses (including Computer aided engineering drawing, computer aided engineering graphics, Computer aided machine drawing etc.) is based on the following parameters:

% of Attendance	**Marks**
≥ 95	05 Marks
90 to < 95	04 Marks
85 to < 90	03 Marks
80 to < 85	02 Marks
75 to < 80	01 Mark

(b) Semester End Examinations (SEE):

- ✓ The performance of the student in laboratory courses shall be evaluated jointly by internal and external examiners for 3 hours duration as per the parameters indicated below:

Parameter	Marks
Just a minute session	10 Marks
Dialogue writing	10 Marks
Group Discussion	10 Marks
Data Interpretation	10 Marks
Presentation	10 Marks
Interview	20 Marks
Total	**70 Marks**

Rubrics For Evaluation of Laboratory Courses

Day-To-Day Lab (Observation) Performance Evaluation (R-17)					**Record Performance Evaluation (R-17)**			
S.N	**Criteria**	**Poor**	**Average**	**Good**	**Criteria**	**Poor**	**Average**	**Good**
1	Language suitability **(4 Marks)**	Wrong usage of words Grammatical errors **(2 Marks)**	Some points are missing from the data written Wrong usage of grammar & vocabulary. **(3 Marks)**	Well-written & spoken Language is error free **(4 Marks)**	Language **(4 Marks)**	Language used is not suitable Full of incorrect vocabulary **(2 Marks)**	Some words are inappropriately used / wrongly spelt **(3Marks)**	Language used is good No word/ spelling errors **(4 Marks)**
2	Content **(4Marks)**	Unable to Deliver all the pints Delivering Irrelevant point **(2 Marks)**	Some points are not given Point analysis is not upto the mark **(3 Marks)**	All the points are analysed properly More content was delivered. **(4 Marks)**	Content **(4 Marks)**	Very less points were written Points were not analysed properly **(2 Marks)**	Some of the points were missing Some points are not properly analysed **(3 Marks)**	Complete information is provided for the topic Important information is provided with illustrations/ exaamples **(4 Marks)**
3	Style of Presentation **(2 Marks)**	Inappropriate body language Improper prentation **(0 Marks)**	Prentation is not upto the mark **(1 Mark)**	Presented well with appropriate ettiquett All important conclusions have been clearly made, student shows good understanding of the topic. **(2 Marks)**	Grammar & Neatness **(2 Mark)**	Frequent grammar and/r spelling errors writing style is rough and immature **(1/2 Mark)**	Some grammatical errors **(1 Marks)**	No grammar/ spelling corrections are found and well-written **(2 Marks)**

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Instructor	Course Coordinator	Module Coordinator	HOD
(Mr B Sagar)	Dr.B.Samrajya Lakshmi	Dr.B.Samrajya Lakshmi	Prof.A Rami Reddy

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi, NAAC Accredited with 'A' grade, Accredited by NBA, Certified by ISO 9001:2015)
L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

Part-A

PROGRAM	**:**	B.Tech., I-Sem., CSE-C
ACADEMIC YEAR	**:**	2020-2021
COURSE NAME & CODE	**:**	APPLIED PHYSICS & 20 FE 54
L-T-P STRUCTURE	**:**	0-0-2
COURSE CREDITS	**:**	1
COURSE INSTRUCTOR	**:**	**Dr. P.V.N.KISHORE**
COURSE COORDINATOR	**:**	**Dr. S. YUSUB**

Pre-requisites : Awareness about the usage of Vernier callipers, Screw Gauge etc.,

Course Educational Objective :

To make students learn the theoretical concepts, Analytical techniques and graphical analysis through completing a host of experiments with the procedures and observational skills using simple and complex apparatus.

Course Outcomes: At the end of the course, the student will be able to :

Co1: Find the wave length of Laser light source and width of single slit by forming Diffraction pattern.
Co2: Estimate the Radius of curvature of Plano convex lens by forming Newton's Rings.
Co3: Analyze the characteristics of different Diodes.
Co4: Determine the energy band gap of a semi conductor Diode.

COURSE ARTICULATION MATRIX (Correlation between Cos & POs, PSOs):

Applied Physics Lab												
COURSE DESIGNED BY	**FRESHMAN ENGINEERING DEPARTMENT**											
Course Outcomes	**Programme Outcomes**											
PO's →	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO1.	**3**	**3**	**1**	**1**					**1**			**1**
CO2.	**3**	**3**	**2**	**1**					**1**			**1**

CO3.	**3**	**3**	**1**	**1**					**1**			**1**
CO4.	**3**	**3**	**1**	**1**					**1**			**1**
CATEGORY	**BASIC SCIENCES**											
APPROVAL	**APPROVED BY ACADEMIC COUNCIL, 2017.**											

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**

1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High).

BOS APPROVED TEXT BOOKS:

1. Lab Manual Prepared by the LBRCE.

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): Section- C

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction	3	20-01-2021		**TLM4**	1,2,3,4	T1	
2.	Demonstration	3	27-01-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
3.	Expt 1 &2	3	03-02-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
4.	Experiment 3	3	10-02-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
5.	Experiment 4	3	17-02-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
6.	Experiment 5	3	24-02-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
7.	Experiment 6	3	03-03-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
8.	Expt 7 &8	3	17-03-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
9.	Experiment 9	3	24-03-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
10.	Experiment 10	3	31-03-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
11.	**Internal Exam**	3	07-04-2021		**TLM4**	CO1, CO2, CO3, CO4	T1	
No. of classes required to complete UNIT-I		30			No. of classes taken:			

EVALUATION PROCESS:

Evaluation Task	Expt. no's	Marks
Day to Day work = **A**	1,2,3,4,5,6,7,8	A=20
Internal test = **B**	1,2,3,4,5,6,7,8	B=10

Evaluation of viva voce = **C**	1,2,3,4,5,6,7,8	C = 5
Evaluation of attendance Marks = **D**	1,2,3,4,5,6,7,8	D = 5
Cumulative Internal Examination : A + B + C + D = 40	1,2,3,4,5,6,7,8	**40**
Semester End Examinations = E	1,2,3,4,5,6,7,8	**E = 60**
Total Marks: A + B + C + D + E = 100	1,2,3,4,5,6,7,8	**100**

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

1.To Attain a solid foundation in Electronics & Communication Engineering fundamentals with an attitude to pursue continuing education.
2. To Function professionally in the rapidly changing world with advances in technology.
3. To Contribute to the needs of the society in solving technical problems using Electronics & Communication Engineering principles, tools and practices.
4. To Exercise leadership qualities, at levels appropriate to their experience, which addresses issues in a responsive, ethical, and innovative manner .

PROGRAM OUTCOMES:

Engineering Graduates will be able to:

(1). **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

(2). **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

(3). **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

(4). **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

(5). **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

(6). **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

(7).**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

(8). **Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

(9). **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

(10). **Communication**: Communicate effectively on complex engineering activities with the

engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

(11). **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

(12).**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs):

Graduate of the ECE will have the ability to

(1) Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.

(2) Design and Analyze Analog and Digital Electronic Circuits or systems and Implement real time applications in the field of VLSI and Embedded Systems using relevant tools

(3) Apply the Signal processing techniques to synthesize and realize the issues related to real time applications.

Dr. P.V.N.Kishore / N. ARUNA	Dr. S. Yusuf	Dr S. Yusuf	Dr A. RAMIREDDY
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi, NAAC Accredited with 'A' grade, Certified by ISO 9001:2015)
L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

PROGRAM : B.Tech., I-Sem., CSE-C

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : **Programming for Problem solving using C** – 20CI01

L-T-P STRUCTURE : **5**-0-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr. L V Krishna rao

COURSE COORDINATOR : **Dr D. Jagan Mohan reddy**

MODULE COORDINATOR: **Dr D. Jagan Mohan reddy**

PRE-REQUISITE: NIL

COURSE OBJECTIVE:

In this course, the student will be able to learn about the basic elements of C Programming structures like Data Types, Expressions, Control Statements, Various I/O Functions and how to solve simple mathematical problems using Control Structures. The Derived Data Types like Arrays, Strings and various operations on them. Modular Programming using Functions and Memory Management using Pointers. User Defined Structures and various operations on it. The basics of files and its I/O Operations.

COURSE OUTCOMES (CO):

- **CO1:** Familiar with syntax and semantics of the basic programming language constructs. **(Understand - L2)**
- **CO2:** Construct derived data types like arrays in solving problem.(**Apply - L3**)
- **CO3:** Decompose a problem into modules and reconstruct it using various ways of user-defined functions. **(Apply - L3)**
- **CO4:** Use user-defined data types like structures and unions and its applications to solve problems.**(Apply- L3)**
- **CO5:** Discuss various file I/O operations and its application.**(Understand - L2)**

COURSE ARTICULATION MATRIX (Correlation between COs, POs & PSOs):

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3														
CO2	3														
CO3	3														
CO4	3	2													
CO5	3														

Note: 1- Slight (Low), **2 -** Moderate (Medium), **3 -** Substantial (High)

BOS APPROVED TEXT BOOKS:

T1 ReemaThareja, Programming in C, Oxford University Press, 2nd Edition, 2015

BOS APPROVED REFERENCE BOOKS:

R1 Jeri R.Hanly, Elliot B.Koffman, Problem Solving and Program Design in C, Pearson Publishers, 7th Edition, 2013

R2 E Balagurusamy, Computer Programming, McGraw Hill Education, 8th Edition.

R3 C: The Complete Reference, McGraw Hall Education,4th Edition.

R4 PradeepDey, Manas Ghosh, Programming in C, Oxford University Press, 2nd Edition, 2011.

R5 Stephen G.Kochan, Programming in C, Pearson Education, 3rd Edition, 2005.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT – 1: INTRODUCTION TO PROBLEM SOLVING THROUGH C PROG.

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	HOD Sign Weekly
1.	Software Development Method for Problem Solving	1	20/04/2021		TLM1, TLM2	CO1	
2.	Algorithm with Examples	1	21/01/2021		TLM1, TLM4	CO1	
3.	Pseudo Code with Examples	1	22/01/2021		TLM1, TLM4	CO1	
4.	Flow Chart with Examples	1	22/01/2021		TLM1, TLM2, TLM4	CO1	
5.	Introduction to C, History of C, Features of C	1	23/01/2021		TLM1, TLM2	CO1	
6.	Structure of a C Program, C Tokens – Keywords, Identifiers, constants	1	27/01/2021		TLM1, TLM2	CO1	
7.	Basic Data Types and Sizes	1	28/01/2021		TLM1, TLM2	CO1	
8.	Input Output Statements and Sample C Program	1	28/01/2021		TLM1, TLM2	CO1	
9.	Formatted & unformatted I/O statements	1	29/01/2021		TLM1, TLM4, TLM5	CO1	
10.	Operators – Arithmetic, Relational, Logical, Assignment	1	30/01/2021		TLM1, TLM4, TLM5	CO1	
11.	Operators – ternary, Bit Wise, Unary , and Special Operators	1	03/02/2021		TLM1, TLM4, TLM5	CO1	
12.	Operator precedence and order of evaluation	1	04/02/2021		TLM1, TLM4, TLM5	CO1	
13.	Control Structures: Decision Statements – if, if else, else if ladder	1	04/02/2021		TLM1, TLM4, TLM5	CO1	
14.	switch statement with example	1	05/02/2021		TLM1, TLM4, TLM5	CO1	
15.	continue, goto, break and labels	1	06/02/2021		TLM1, TLM4,	CO1	

					TLM5		
16.	Loop Statements: while loop and do-while loop	1	10/02/2021		TLM1, TLM4, TLM5	CO1	
17.	for loop with Examples	1	11/02/2021		TLM1, TLM4, TLM5	CO1	
	Assignment / Quiz – 1				TLM3	CO1	
No. of classes required to complete UNIT-I:		**17**					

UNIT – 2: Arrays

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome Cos	HOD Sign Weekly
18.	Introduction to Arrays and Types of Arrays	1	11/02/2021		TLM1	CO2	
19.	1-D Array: Declaration and Initialization with Examples	1	12/02/2021		TLM1, TLM4, TLM5	CO2	
20.	Accessing 1-D Array with Insertion, Deletion and Searching Operations.	1	13/02/2021		TLM1, TLM4, TLM5	CO2	
21.	2-D Array: Declaration and Initialization with Examples	2	17/02/2021 18/02/2021		TLM1, TLM4, TLM5	CO2	
22.	Accessing 2-D Array with Examples.	1	18/02/2021		TLM1, TLM4, TLM5	CO2	
23.	2-D Array Examples: Matrix Addition, Subtraction, Multiplication, Transpose	2	19/02/2021 20/02/2021		TLM1, TLM4, TLM5	CO2	
24.	**Character Arrays:** Introduction, Declaration, Initialization and Accessing	1	24/02/2021		TLM1, TLM4, TLM5	CO2	
25.	Arithmetic Operations and String Handling Functions Part – 1 with Examples	1	25/02/2021		TLM1, TLM4, TLM5	CO2	
26.	String Handling Functions Part – 2 with Examples	1	25/02/2021		TLM1, TLM4, TLM5	CO2	
	Assignment / Quiz – 2				TLM6	CO2	
No. of classes required to complete UNIT-II:		**11**					

UNIT – 3: Functions and Pointers

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome Cos	HOD Sign Weekly
27.	**Functions:** Introduction to Functions, Differences between Pre	1	24/02/ 2021		TLM1	CO3	

	Defined Functions and User Defined Functions						
28.	Function Declaration/Prototype, Function Definition, Function Calling	1	25/02/ 2021		TLM1	CO3	
29.	Return Type, Parameter Passing, Calling Function, Called Function	1	25/02/ 2021		TLM1, TLM4, TLM5	CO3	
30.	Recursive Functions with Examples	1	26/02/ 2021		TLM1, TLM4, TLM5	CO3	
31.	Functions with Arrays	1	27/02/ 2021		TLM1, TLM4, TLM5	CO3	
32.	Storage Classes	1	03/03/ 2021		TLM1, TLM4, TLM5	CO3	
33.	Dynamic Memory Management Functions, Command Line Arguments	1	04/03/ 2021		TLM1, TLM4, TLM5	CO3	
34.	Programming Examples	1	04/03/ 2021		TLM5	CO3	
35.	**Pointers:** Introduction, declaration and Initialization of Pointer Variables	1	05/03/ 2021		TLM1	CO3	
36.	Pointers Expressions, Addresses and Arithmetic	1	06/03/ 2021		TLM1, TLM4, TLM5	CO3	
37.	Pointers and Arrays	1	17/03/ 2021		TLM1, TLM4, TLM5	CO3	
38.	Pointers and Strings	1	18/03/ 2021		TLM1, TLM4, TLM5	CO3	
39.	Pointers to Pointers	1	18/03/ 2021		TLM1, TLM4, TLM5	CO3	
40.	Pre Processor Directives and Macros	1	19/03/ 2021		TLM1, TLM5	CO3	
	Assignment – 3 / Quiz – 3				TLM6	CO3	
No. of classes required to complete UNIT-III:		**14**					

UNIT – 4: Derived Types

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	HOD Sign Weekly
41.	**Structures:** Introduction, Declaration and Initialization	1	20/03/2021		TLM1	CO4	
42.	Accessing Structures with Examples	1	24/03/2021		TLM1, TLM4, TLM5	CO4	
43.	Nested Structures, Array of Structures	2	25/03/2021		TLM1, TLM4,	CO4	

					TLM5		
44.	Structures and Functions	2	26/03/2021 27/03/2021		TLM1, TLM4, TLM5	CO4	
45.	Pointers to Structures, Self Referential Structures	2	31/03/2021, 01/04/2021		TLM1, TLM4, TLM5	CO4	
46.	**Unions:** Introduction, Declaration and Initialization	1	01/04/2021		TLM1	CO4	
47.	Accessing Structures with Examples	2	03/04/2021		TLM1, TLM4, TLM5	CO4	
48.	Typedef and Enum with Examples	1	07/04/2021		TLM1, TLM5	CO4	
49.	**Assignment – 4 / Quiz – 4**					CO4	
No. of classes required to complete UNIT-IV		**12**					

UNIT – 5: Files

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome Cos	HOD Sign Weekly
50.	Introduction, Text and Binary Files, Streams	1	08/04/2021		TLM1	CO5	
51.	Standard I/O and Formatted I/O Functions	2	08/04/2021 09/04/2021		TLM1, TLM5	CO5	
52.	File I/O Operations-fgetc(),fputc(),fgets(),fputs()	2	10/04/2021 15/04/2021		TLM1, TLM4, TLM5	CO5	
53.	File I/O Operations – fprintf(),fscanf(),fread(),fwrite()	2	15/04/2021 16/04/2021		TLM1, TLM4, TLM5	CO5	
54.	Error Handling	1	17/04/2021		TLM1, TLM4, TLM5	CO5	
55.	Programming Examples	2	22/04/2021		TLM1, TLM5	CO5	
56.	**Assignment – 5 / Quiz – 5**				TLM6	CO5	
No. of classes required to complete UNIT-V		**10**					

Contents beyond the Syllabus:

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome	HOD Sign Weekly
57.	Introduction to Objective C	1	23/04/2021		TLM1, TLM2		
58.	graphics library in C	1	24/04/2021		TLM1, TLM2		

Teaching Learning Methods					
TLM1	Chalk and Talk	**TLM4**	Problem Solving	**TLM7**	Seminars or GD
TLM2	PPT	**TLM5**	Programming	**TLM8**	Lab Demo
TLM3	Tutorial	**TLM6**	Assignment or Quiz	**TLM9**	Case Study

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO I: To inculcate the adaptability skills into the students for software design, software development or any other allied fields of computing.

PEO II: To equip the graduates with the ability to analyze, design and synthesize data to create novel products.

PEO III: Ability to understand and analyze engineering issues in a broader perspective with ethical responsibility towards sustainable development.

PEO IV: To empower the student with the qualities of effective communication, team work, continues learning attitude, leadership needed for a successful computer professional.

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineer**ing and management principles and apply these to one's own work, as a member and** leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. An ability to apply softwareengineering practices and strategies in software project development using open source programming environment for the success of organization.

2. An Ability to design and develop computer programs in networking, web applications and IoT as per the society needs.

3. To inclucate an ability to analyze,design and implement database applications.

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Mr L V Krishna rao	Dr. D jagan Mohan reddy	Dr. D jagan Mohan reddy	Dr.D Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)
Accredited by NAAC & NBA (Under Tier - I) ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi. and Affiliated to JNTUK, Kakinada
L.B. REDDY NAGAR, MYLAVARAM, KRISHNA DIST., A.P.-521 230.
http://cse.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor : K.SUNDEEP SARADHI
Course Name & Code : IT WORKSHOP LAB (20IT51)
L-T-P Structure : 0-0-3 Credits: 3
Program/Sem/Sec : B.Tech., CSE, I-Sem., Section – C A.Y: 2020 - 2021

PRE-REQUISITE: NIL

COURSE OBJECTIVE: The objective of the course is to impart knowledge about the components of PC, Assembling PC, Installation of OS, softwares like MS-Office, LaTex and concepts related to Networking, Internet as well as antivirus.

COURSE OUTCOMES (COs)

At the end of the course, the student will be able to:

CO1	Identify the basic hardware components, keyboard shortcuts, assembling and disassembling of the system (PC).
CO2	Demonstrate Operating System installation, apply various commands of linux operating system, networking.
CO3	Create web pages using HTML, documents using applications like LaTeX, Google forms and use application software packages: MS-Word, MS-Excel, MS-Power Point to create documents and presentation.
CO4	Improve individual / teamwork skills, communication & report writing skills with ethical values.

COURSE ARTICULATION MATRIX (Correlation between COs, POs & PSOs):

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	-	-	-	-	-	-	-	-	-	-	-	-	1	-
CO3	3	-	-	-	3	-	-	-	-	-	-	-	-	1	-
CO4	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Slight (Low), **2** – Moderate (Medium), **3** - Substantial (High).

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

S.No.	Programs to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction and Typing Practice	3	19/01/2021		TLM2/ TLM4	
2.	Identifying the peripheral components of a computer. Understanding the Block diagram of the CPU	3	02/02/2021		TLM2/ TLM4	
3.	Disassembling and assembling the PC back to working condition	3	09/02/2021		TLM2/ TLM4	
4.	1. Installation of MS WINDOWS and LINUX on personal computer. 2. Linux Operating System commands	3	16/02/2021		TLM2/ TLM4	
5.	Working on Networking Commands	3	23/02/2021		TLM2/ TLM4	
6.	Working on Internet Services	3	02/03/2021		TLM2/ TLM4	
7.	Introduction to HTML and its tags. Preparing a simple website/homepage.	3	09/03/2021		TLM2/ TLM4	
8.	Demonstration and Practice of Text Editors	3	16/03/2021		TLM2/ TLM4	
9.	Demonstration and practice of Microsoft Word, Power Point, Microsoft Excel	3	23/03/2021		TLM2/ TLM4	
10.	Demonstration and practice of LaTeX	3	30/03/2021		TLM2/ TLM4	
11.	Creating online documents using Google docs. Creating and sharing online quiz exam with marks/Grads Creating and sharing Bio-data form.	3	06/03/2021		TLM2/ TLM4	
12.	Lab Internal Exam		20/03/2021			

Teaching Learning Methods			
TLM1	Chalk and Talk	**TLM4**	Demonstration (Lab/Field Visit)
TLM2	PPT	**TLM5**	ICT (NPTEL/Swayam Prabha/MOOCS)
TLM3	Tutorial	**TLM6**	Group Discussion/Project

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	**The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	**Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	**Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	**Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	**Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	**Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO 1	**Programming Paradigms:** The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 2	**Data Engineering:** To inculcate an ability to analyze, design and implement database applications.
PSO 3	**Software Engineering:** The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.

Course Instructor	Course Coordinator	Module Coordinator	HOD
K.SUNDEEP SARADHI	B S R KRISHNA	Dr. D.VEERAIAH	Dr. D.VEERAIAH