LESSON PLAN

Department: INFORMATION TECHNOLOGY **Program:** B.Tech
Course : – Computer Programming (17CI01)
SEM: I **Academic Year : 2017-18**

1. **Pre-requisites: -NIL-**

2. **Course Educational Objectives (CEOs):**

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: Identify basic elements of C programming structures like data types, expressions ,control statements, various simple functions and in view of using them in problem solving.

CO2: Apply various operations on derived data types like arrays and strings in problem solving.

CO3: Design and Implement of modular Programming and memory management using pointers.

CO4: Implement user defined data structures used in specific applications.

CO5: Compare different file I/O operations on text and binary files.

4. Course Articulation Matrix:

Course Code	COs	Programme Outcomes												PSOs		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
T170	CO1	2	3													
	CO2	2	3													
	CO3	2	3	2												
	CO4	2	3	2												
	CO5	2	3	2												
1 = Slight (Low) 2 = Moderate (Medium) 3-Substantial(High)																

3. Course Delivery Plan:

S.NO	TOPIC TO BE COVERED	No. of Classes		Date	DM
		As per the Schedule	Taken		
UNIT-I					
1	Fundamentals of Computers	1			1
2	Algorithm/pseudo code	1			1
3	Flow charts, Examples	1			1,2
4	Examples on Algorithm/pseudo	1			1,2
5	Examples on Flow charts.	1			1,2
6	Introduction to c language	1			1
7	C advantages , C tokens	1			1
8	Constants, keywords	1			1
9	Identifiers, variables	1			1
10	Structure of a c program, Input and	1			1
11	Basic data types and sizes. Variable	1			1
12	Arithmetic, relational and logical	1			1
13	Increment/decrement, assignment and conditional operators	1			1
14	Bitwise operators, conditional	1			1
15	Type conversion, Examples	1			1
16	**TUTORIAL / ASSIGNMENT-1**	1			3,4
17	Decision making with simple if, if	1			1
18	Else-if ladder, switch statement	1			1
19	Programs on if constructs	1			1
20	while, do- while loops	1			1
21	For, break & continue statements	1			1
22	goto and labels	1			1
23	exercises Programming examples	1			1,2,5
Number of classes		23			
UNIT-II					
24	Arrays definition, declaration and examples	1			1
25	Accessing elements, storing elements.	1			1
26	Two- dimensional arrays, Accessing element	1			1
27	Multi-dimensional arrays, applications of arrays.	1			1
28	Example Programs on arrays	1			1,2,5
29	**TUTORIAL / ASSIGNMENT-2**	1			3,4
30	Character arrays – Strings, Accessing	1			1
31	Program on String accessing, operation	1			1,2,5
32	String handling functions	1			1
33	Usage of String functions in programs	1			1
34	Programs without using string handling functions	1			1,2,5
Number of classes		**11**			

I-MID EXAMINATIONS					
UNIT-III					
35	Pointers: concepts, initialization of pointer variables	1			1
36	Pointers and Arrays, Strings.	1			1
37	Pointers to pointers, Examples	1			1
38	Pre-processor directives, Macros	1			1
39	Example Programs on pointers	1			1,2,5
40	Example Programs on pointers	1			1,2,5
41	**TUTORIAL / ASSIGNMENT-3**	1			3,4
42	Introduction to modular programming	1			1
43	Functions: Basics of functions,	1			1
44	Standard library functions,	1			1
45	Parameter passing techniques,	1			1
46	Recursion in functions, examples	1			1,2,5
47	**TUTORIAL / ASSIGNMENT-4**	1			3,4
48	Functions with arrays, passing arrays	1			1
49	Functions with pointers	1			1
50	Programs on functions with arrays and	1			1
51	Storage classes – auto, static, extern,	1			1
52	Dynamic memory management	1			1
53	Command line arguments, programs	1			1
54	Programs on Command line arguments	1			1,2,5
Number of classes		20			
UNIT-IV					
55	Introduction to structures, use of structures in programming	1			1
56	Structures declaration, definition and initialization	1			1
57	Programs on structure creation, accessing and printing	1			1,2,5
58	Use of arrays as members in structure	1			1
59	Nested structures, Arrays of structures	1			1
60	Example programs on structures	1			1,2,5
61	Structures and functions, examples	1			1
62	Pointers to structures	1			1
63	Self-referential structures	1			1
64	Unions and differences over structures	1			1
65	Typedef, bit fields	1			1
66	Example programs on Unions	1			1,2,5
67	**TUTORIAL / ASSIGNMENT-5**	1			3,4
Number of classes		13			
UNIT-V					
68	File Concept, text files, reading & writing	1			1
69	binary files, modes of operation	1			1

70	Standard I/O operations	2			1
71	Formatted I/O operations	1			1
72	File I/O operations	2			1
73	Error handling functions	1			1
74	Programs on file creation	1			1,2,5
75	Programs on file accessing	1			1,2,5
76	Programs on file reading and writing data	1			1,2,5
77	Programs on file handling functions	1			1,2,5
78	**TUTORIAL / ASSIGNMENT-6**	1			3,4
Number of classes		13			
Total Number of classes		80			

Delivery Methods (DM):

1. Chalk & Talk 2. ICT Tools 3. Tutorial 4. Assignment/Test/Quiz
5. Laboratory/Field Visit 6. Web based learning.

	Course Instructor	**Course Coordinator**	**Module Coordinator**	**HOD**
Signature				
Name of the Faculty	**Dr.S.Naganjaneyulu**			**Dr.D.Nagaraju**

Head of the Department

LAKKIREDDY BALI REDDY COLLEGE OF ENGINEERING
DEPARTMENT OF INFORMATION TECHNOLOGY
(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., IT

ACADEMIC YEAR : 2017-18

COURSE NAME & CODE : Differential Equations & Linear Algebra 17FE04

L-T-P STRUCTURE : 3-2-0

COURSE CREDITS : 4

COURSE INSTRUCTOR : D.Vijay kumar, Assistant Professor

COURSE COORDINATOR : **Dr.A.Rami Reddy**

COURSE OBJECTIVE: 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 Matrix Algebra.

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

CO	Statement At the end of the course, student will be able to	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
1	Apply first order and first degree degree differential equations to find the orthogonal trajectories and to calculate current flow in LCR circuit.	3	2	2									2
2	Discriminate among the structure and the procedure of solving higher order differential equations with constant coefficients.	3	2	2									2
3	Developing continuous functions as an infinite series and compute the Jacobian to determine the functional dependence.	2	2	1									2
4	Distinguish among the pros and cons between the row operation methods and iterative methods in solving system of linear equations.	3	2	2									2
5	Compute the eigen values and eigen vectors and powers n inverse of a square matrix through Cayley Hamilton Theorem.	3	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).

BOS APPROVED TEXT BOOKS:

1. S. S. Sastry, "Introductory Methods of Numerical Analysis", PHI, 5thEdition,2005.
2. Dr. B. V. Ramana, "Higher Engineering Mathematics", TMH Publications, 1stEdition,2010.

BOS APPROVED REFERENCE BOOKS:

1.Dr.B.S.Grewal,"HigherEngineeringMathematics",KhannaPublishers, 42nd Edition,2012.

2. Steven .C. Chopra and Ra. P. Canale, "Numerical Methods for Engineers with programming and software application", TMH Publications,4th Edition,2002.

3. M. K. Jain, S. R. K. Iyengar, R.K. Jain, "Numerical Methods for Scientific and Engineering Computation", New Age International Publishers, 5thEdition,2007.

COURSE DELIVERY PLAN (LESSON PLAN):

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	HOD Sign Weekly
1.	Introduction to the course	1	05-07-17		**TLM1**	
2.	Introduction to Differential equations of first order and first degree	1	06-07-17		**TLM1**	
3.	Variable separable method	1	07-07-17		**TLM1**	
4.	Homogeneous method	1	8-07-17		**TLM1**	
5.	Exact Differential Equations	2	10-07-17 12-07-17		**TLM1**	
6.	Non Exact Differential Equations of Type - I	2	13-07-17 14-07-17		**TLM1**	
7.	Non Exact Differential Equations of Type - II	2	15-07-17 17-07-17		**TLM1**	
8.	Non Exact Differential Equations of Type - III	2	19-07-17 20-07-17		**TLM1**	
9.	Non Exact Differential Equations of Type - IV	2	21-07-17 22-07-17		**TLM1**	
10.	Orthogonal Trajectories in Cartesian form	2	26-07-17 28-07-17		**TLM1**	
11.	Orthogonal Trajectories in Polar form	2	29-07-17 31-07-17		**TLM1**	
12.	Newton's Law of Cooling	2	02-08-17 03-08-17		**TLM1**	
13	Law of Growth & Decay	2	04-08-17 05-08-17		**TLM1**	
14	TUTORIAL-1	1	24-07-17		**TLM3**	
15	TUTORIAL-2	1	07-08-17		**TLM3**	
16	Assignment/Quiz-1	1	09-08-17		**TLM6**	
No. of classes required to complete UNIT-I		25	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	HOD Sign Weekly
13.	Introduction to Higher Order Differential Equations and Solution of Homogeneous Differential Equations	2	10-08-17 16-08-17		**TLM1**	
14.	Non Homogeneous Differential Equations of Type - I	1	17-08-17		**TLM1**	

15.	Non Homogeneous Differential Equations of Type - II	2	18-08-17 19-08-17		**TLM1**	
16.	Non Homogeneous Differential Equations of Type - III	1	23-08-17		**TLM1**	
17.	Non Homogeneous Differential Equations of Type - IV	2	24-08-17 26-08-17		**TLM1**	
18.	Non Homogeneous Differential Equations of Type - V	1	30-08-17		**TLM1**	
19.	Method of Variation of Parameters	2	31-08-17 1-09-17		**TLM1**	
20.	TUTORIAL-3	1	21-08-17		**TLM3**	
21.	TUTORIAL-4	1	28-08-17		**TLM3**	
22.	Assignment/Quiz-2	1	02-09-17		**TLM6**	
No. of classes required to complete UNIT-II		14	No. of classes taken:			

UNIT-III : 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	HOD Sign Weekly
23.	Taylor Series and Maclaurin's Series of continuous functions	2	09-09-17 11-09-17		**TLM1**	
24.	Jacobians and Functional Dependence	3	13-09-17, 14-09-17		**TLM1**	
25.	Formation of PDE by eliminating arbitrary constants	2	15-09-17 18-09-17		**TLM1**	
26.	Formation of PDE by eliminating arbitrary constants	2	20-09-17 21-09-17		**TLM1**	
27.	Solution of linear PDE - Lagranze's method	3	22-09-17 23-09-17		**TLM1**	
28.	TUTORIAL-6	1	25-09-17		**TLM3**	
29.	TUTORIAL-7	1	27-09-17		**TLM3**	
30.	Assignment/Quiz-3	1	04-10-17		**TLM6**	
No. of classes required to complete UNIT-III		15	No. of classes taken:			

UNIT-IV : System of Linear Equations

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
31.	Introduction and Definitions of Matrices	1	05-10-17		**TLM1**	
32.	Rank of the Matrix	2	06-10-17 07-10-17		**TLM1**	
33.	Echelon Form	2	09-10-17, 11-10-17		**TLM1**	

34.	Normal Form	2	12-10-17 13-10-17		**TLM1**	
35.	PAQ Form	1	14-10-17		**TLM1**	
36.	Homogeneous System of Linear Equations	2	16-10-17 19-10-17		**TLM1**	
37.	Non Homogeneous System of Linear Equations	2	19-09-17 20-10-17		**TLM1**	
38.	TUTORIAL-8	1	21-10-17		**TLM3**	
39.	TUTORIAL-9	1	23-10-17		**TLM3**	
40.	Assignment/Quiz-3	1	25-10-17		**TLM6**	
No. of classes required to complete UNIT-IV		15	No. of classes taken:			

UNIT-V : Eigen Values and Eigen Vectors

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.	Eigen Values and Eigen Vectors	2	26-10-17 27-10-17			
42.	Properties of Eigen Vectors	2	28-10-17 30-10-17		**TLM1**	
43.	Cayley Hamilton Theorem	3	01-11-17 02-11-17 03-11-17		**TLM1**	
44.	Inverse and Powers of Matrix	2	04-11-17 06-11-17		**TLM1**	
45.	TUTORIAL-10	1	08-11-17		**TLM3**	
46.	TUTORIAL-11	1	09-11-17		**TLM3**	
47.	Assignment/Quiz-5	1	10-11-17		**TLM6**	
No. of classes required to complete UNIT-V		12	No. of classes taken:			

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
Orientation Classes	03-07-2017	08-07-2017	1 W
I Phase of Instructions-1	10-07-2017	01-09-2017	8 W
I Mid Examinations	04-09-2017	08-09-2017	1 W

II Phase of Instructions	09-09-2017	11-11-2017	9 W
II Mid Examinations	13-11-2017	17-11-2017	1 W
Preparation and Practicals	18-11-2017	29-11-2017	1 1/2 W
Semester End Examinations	30-11-2017	08-12-2017	2 W

EVALUATION PROCESS:

Evaluation Task	COs	Mar
Assignment/Quiz – 1	1	A1=
Assignment/Quiz – 2	2	A2=
I-Mid Examination	1,2	B1=2
Assignment/Quiz – 3	3	A3=
Assignment/Quiz – 4	4	A4=
Assignment/Quiz – 5	5	A5=
II-Mid Examination	3,4,5	B2=2
Evaluation of Assignment/Quiz Marks: A=(A1+A2+A3+A4+A5)/5	1,2,3,4	A=1
Evaluation of Mid Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2	1,2,3,4	B=2
Cumulative Assignments		**C =**
Cumulative Attendance		**D=**
Semester End Examinations	**1,2,3,4**	**E=6**
Total Marks: A+B+C+D+E	**1,2,3,4**	**10**

Course Instructor
D.Vijay kumar

Course Coordinator
Dr. A. Rami Reddy

HOD
Dr.A. Rami Reddy

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)
L.B.REDDY NAGAR, MYLAVARAM-521 230. A.P. INDIA
Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi
NAAC Accredited with "A" grade, Accredited by NBA
New Delhi & Certified by ISO 9001:2008
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
http://www.lbrce.ac.in, ecedept4@gmail.com Phone: 08659-222933, Fax: 08659-222931

LESSON PLAN

ACADEMIC YEAR : 2014-15
COURSE : B.Tech., (II-Sem.,)
BRANCH : Information & Technology
SUBJECT : Electronic devices and circuits(Code: S 224)
FACULTY : Mr.P.Venkat Rao

S.No.	Tentative Date	Topics to be covered	No. of Classes	Actual Date	Content Delivery Method
UNIT-I : SEMICONDUCTOR PHYSICS					
1.	24-2-15	Introduction to Subject	1		
2.	24-2-15	Introduction to Unit-I	1		
3.	25-2-15	Charged particle and energy bands.	1		
4.	26-2-15	Material classification	1		
5.	28-2-15	Conductivity and mobility	1		
6.	3-3-15	Intrinsic semiconductors	1		
7.	3-3-15	Extrinsic semiconductors	1		
8.	4-3-15	Conductivity expression and donor/acceptors	1		
9.	5-3-15	Fermi level in intrinsic & extrinsic semiconductor	1		
10.	7-3-15	Carrier concentration	1		
11.	10-3-15	**Tutorial-1**	1		
12.	10-3-15	Mass action law and problems	1		
13.	11-3-15	Charge densities and carrier lifetime	1		
14.	12-3-15	Diffusion continuity equation	1		
15.	17-3-15	Continuity equation	1		
16.	17-3-15	Hall effect	1		
17.	18-3-15	Problems from Unit 1.Unit Overview	1		
18.	19-3-15	**Tutorial-2**	1		
		Total Classes(UNIT-I)	18	--	--
UNIT-II :JUNCTION DIODE AND SPECIAL DIODES					
19.	24-3-15	Introduction to Unit-II	1		
20.	24-3-15	PN junction diode	1		
21.	25-3-15	Open –circuited p-n junction and current components	1		
22.	26-3-15	Diode current equation and biasing	1		
23.	31-3-15	V-I diode characteristics	1		
24.	31-3-15	Temperature dependence and diode resistance	1		
25.	1-4-15	Diode capacitance	1		
26.	2-4-15	**Tutorial-3**	1		
27.	4-4-15	Special diodes: Zener diode	1		
28.	7-4-15	Tunnel diode and Varactor diode	1		
29.	7-4-15	LED, photodiode	1		
30.	8-4-15	LCD—Unit Overview	1		
31.	9-4-15	**Tutorial-4**	1		

		Total Classes(UNIT-II)	13	--	--
		UNIT-III : BJT & JFET			
32.	21-4-15	Introduction to Unit-III	1		
33.	21-4-15	BJT and types-operation .	1		
34.	22-4-15	Current components	1		
35.	23-4-15	**Tutorial-5**	1		
36.	25-4-15	Large current gain and efficiency	1		
37.	28-4-15	Input and output characteristics for CB,CE.	1		
38.	28-4-15	Eber's Moll model	1		
39.	29-4-15	Concept of FET. Difference between BJT &FET.	1		
40.	30-4-15	FET construction and classification	1		
41.	2-5-15	Drain and transfer characteristics	1		
42.	5-5-15	**Tutorial-6**	1		
43.	5-5-15	Enhancement and depletion mode in MOSFET.	1		
44.	6-5-15	Photo transistor and UJT	1		
45.	7-5-15	SCR	1		
46.	9-5-15	UJT relaxation oscillator-Overview of Unit.	1		
47.	12-5-15	**Tutorial-7**	1		
		Total Classes(UNIT-III)	16	--	--
		UNIT-IV : BJT BIASING			
48.	12-5-15	Introduction to Unit-IV	1		
49.	13-5-15	Biasing and stability factors.	1		
50.	14-5-15	Load line and Q point.	1		
51.	16-5-15	Stability factors expression and techniques. Fixed bias	1		
52.	2-6-15	**Tutorial-8**	1		
53.	2-6-15	Collector to base bias.	1		
54.	3-6-15	Self bias and calculation of parameters.	1		
55.	4-6-15	Thermal runaway	1		
56.	6-6-15	Avoiding thermal runaway and bias compensation	1		
57.	9-6-15	Diode compensation	1		
58.	9-6-15	**Tutorial-9**	1		
59.	10-6-15	FET biasing and need.	1		
60.	11-6-15	Problems and Unit overview.	1		
61.	13-6-15	**Tutorial-10**	1		
		Total Classes(UNIT-IV)	14	--	--
		UNIT-V :RECTIFIERS AND FILTERS			
62.	16-6-15	Introduction to Unit-V.Half wave rectifier	1		
63.	16-6-15	Full wave rectifier	1		
64.	17-6-15	FWR with bridge circuit and parameter calculations	1		
65.	18-6-15	**Tutorial-11**	1		
66.	20-6-15	Comparison of rectifiers and percentage regulation.	1		
67.	23-6-15	Concept of filters.	1		
68.	23-6-15	L and C filters	1		
69.	24-6-15	Other filter sections	1		
70.	25-6-15	Need for voltage regulator.	1		
71.	27-6-15	Design of Zener diode voltage regulator.	1		
72.	30-6-15	Overview of Unit**.**	1		
73.	30-6-15	**Tutorial-12**	1		
		Total Classes(UNIT-V)	11	--	--
		TOPICS BEYOND THE SYLLABUS			
74.	1-7-15	Use of diode and transistor in switching applications	1		

75.	2-7-15	Concept of amplifiers	1		
Total Classes(TOPICS BEYOND THE SYLLABUS)			2	--	--
Total Number of Classes Required to complete the Syllabus			75	--	--
Total Number of Classes Taken				--	--

DELIVERY METHODS			
DM1	Lecture interspersed with discussions /BB	**DM4**	Assignment/Test
DM2	Tutorial	**DM5**	Demonstration (laboratory, field visit)
DM3	Lecture with a quiz	**DM6**	Presentations/PPT

Signature			
Name			
	Subject Teacher	**Course Coordinator**	**HOD**

Pre-requisite :

Course Educational Objective (CEOs) : To impart the knowledge on various types of electro chemical energy systems, corrosion prevention methods and characteristics of various engineering materials and to enable the students to obtain the knowledge on photo chemical processes , liquid crystals, analytical and spectroscopic techniques of chemical analyses.

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

CO1: Analyze different types of electrodes and batteries for technological applications.
CO2: Apply the principles of corrosion in order to maintain various equipments more effectively.
CO3: Identify the importance of engineering materials like nano materials, plastics and rubbers.
CO4: Analyze various photo chemical processes & applications of liquid crystals.
CO5: Identify the important of analytical and spectroscopic techniques in chemical analyses.

Course Articulation Matrix:

Course Outcomes PO's →	ENGINEERING CHEMISTRY											
	Programme Outcomes											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
CO1.	3	3	3	2	2	2	2					2
CO2.	3	3	3	2	2	2	2					2
CO3.	3	3	3	2	2	2	2					2
CO4.	3	3	3	2	2	2	2					2
CO5.	3	3	2	3	3							2
CATEGORY	BASIC SCIENCES											
APPROVAL	APPROVED BY ACADEMIC COUNCIL, 2017.											
	Where 3- Strong, 2-Medium & 1- Least											

4. Course Delivery Plan:

S.NO	TOPIC TO BE COVERED	No.of Classes		Date	DM
		As per the Schedule	Taken		
1	Orientation class-1	1	1	04-07-17	1
2	Orientation class-2	1	1	05-07-17	1
3	Orientation class-3	1	1	07-07-17	1
4	Orientation class-4	1	1	07-07-17	1
5	Orientation class-5	1	1	10-07-17	1
	Unit-I				
6	Concept of electrode potential	1	1	11-07-17	1
7	SRP & SOP, EMF	1	1	12-07-17	1
8	S.H.E and its drawbacks	1	1	14-07-17	1
9	Calamel electrode	1	1	14-07-17	1
10	Tutorial-1	1	1	17-07-17	3
11	Measurement of electrode potential	1	1	18-07-17	1
12	Electrochemical series & applications	1	1	19-07-17	1
13	Applications of electrochemical series (contd)	1	1	21-07-17	1
14	Nernst equation Derivation	1	1	21-07-17	1
15	Tutorial-2	1	1	24-07-17	3
16	Problems on Nernst equation	1	1	25-07-17	1
17	Problems on Nernst equation	1	1	26-07-17	1
18	Problems on Nernst equation	1	1	28-07-17	1
19	Primary, secondary &reserve batteries	1	1	28-07-17	1
20	Dry battery (leclanche cell)	1	1	31-07-17	1
21	Nickel- Cadmium battery	1	1	01-08-17	1
22	Magnesium – Copper reserve battery	1	1	02-08-17	1
23	Hydrogen –oxygen Fuel cell	1	1	04-08-17	1
24	Tutorial-3	1	1	07-08-17	3
25	Quiz questions	1	1	08-08-17	1
26	Assignment	1	1	09-08-17	4
	Number of classes	**21**			
	Unit-II				
27	Corrosion definition examples, definition of dry corrosion.	1	1	11-08-17	1
28	Oxidative. Corrosion by other gases	1	1	11-08-17	1
29	Liquid metal corrosion, Pilling bed worth rrulerule	1	1	16-08-17	1
30	Wet corrosion- mechanism	1	1	18-08-17	1
31	Tutorial-1	1	1	18-08-17	1
32	Galvanic corrosion	1	1	21-08-17	1
33	Concentration cell corrosion	1	1	22-08-17	1
34	Concentration cell corrosion (contd)	1	1	23-08-17	1
35	Passivity, Exceptions in E.C series, Galvanic series	1	1	25-08-17	1
36	Tutorial-2	1	1	25-08-17	3
37	Nature of metal	1	1	28-08-17	1
38	Nature of environment	1	1	29-08-17	1
39	Cathodic protection	1	1	30-08-17	1

40	electroplating	1	1	01-09-17	1
41	Metal cladding & Quiz questions	1	1	01-09-17	1
42	Assignment	1	1	01-09-17	1,4
	Number of classes	**16**			
Unit-III					
43	Definition of nanomaterial	1	1	11-9-17	1
44	Properties of nano materials	1	1	12-09-17	1
45	Preparation of nano materials (sol gel method)	1	1	13-09-17	1
46	Applications of nano materials	1	1	15-09-17	1
47	Tutorial-1	1	1	15-09-17	3
48	Basic terminology of polymers	1	1	18-09-17	1
49	Classification of polymers	1	1	19-09-17	1
50	Classification of polymers & Types of polymerisation	1	1	20-09-17	1
51	Preoparation , properties & applications of Bakelite	1	1	22-09-17	1
52	Preoparation , properties & applications of PMMA	1	1	22-09-17	1
53	Conducting polymers	1	1	25-09-17	1
54	FRPs and processing of natural rubber,vulcanization ,advantages	1	1	26-09-17	1
55	Preoparation , properties & applications of Thiokol and	1	1	03-10-17	1
56	Tutorial-II	1	1	04-10-17	3
57	Quiz questions	1	1	06-10-17	1
58	Assignment	1	1	06-10-17	4
	Total Number of Classes	**16**			
Unit-IV					
59	Definition, differences between thermal and photo chemical reactions	1	1	09-10-17	1
60	Grothers-Droper law, Stark-Einstein law and Quantum efficiency(Definition only).	1	1	10-1017	1
61	Fluorescence, phosphorescence – applications	1	1	11-10-17	1
62	chemiluminiscence, bio-luminescence and Photo-	1	1	12-10-17	1
63	Tutorial-1	1	1	13-10-17	3
64	Definition, Identification and structural aspects of molecules to form liquid crystals	1	1	13-10-17	1
65	Thermo tropic liquid crystals and types	1	1	16-10-17	1
66	lyotropic liquid crystals and applications.	1	1	17-10-17	1,3
67	Tutorial-II	1	1	18-10-17	3
68	Quiz questions	1	1	20-10-17	1
69	Assignment	1	1	20-10-17	1
	Total Number of classes	**11**			4
Unit-IV					
70	Types of analysis, Analysis of physical characteristics, Gravimetric and volumetric analysis (basic concept only). Analysis of physical characteristics.	1	1	23-10-17	1
71	Electro analytical techniques – Introduction	1	1	24-10-17	1
72	Strong acid - strong base and strong acid - weak base, weak acid -strong base and weak acid -weak base – advatages.	1	1	25-10-17	1
73	Acid-base and oxidation-reduction titrations-advantages	1	1	27-10-17	1

74	Principle and determination of Iron by using thiocynate as a reagent.	1	1	27-10-17	1
75	Tutorial-1	1	1	30-10-17	3
76	Origin of electronic spectra, Types of spectra-emission and absorption spectra and Beer-Lambert's law	1	1	31-10-17	1
77	Types of vibrations, factors influencing vibrational frequencies.	1	1	01-11-17	1
78	Applications of IR-Spectroscopy.applications of IR-Spectroscopy.	1	1	03-11-17	1
79	Types of electronic transitions, probability	1	1	03-11-17	1
80	Chomophores, Auxochromes and applications of UV-S	1	1	06-11-17	1
81	Tutorial-II	1	1	07-11-17	3
82	Quiz questions	1	1	08-11-17	1
83	Assignment	1	1	10-11-17	4
Total Number of classes		**14**			
Total Number of classes		**83**			

Delivery Methods (DM):
1.Chalk & Talk 2. ICT Tools 3. Tutorial 4. Assignment/Test/Quiz
5. Laboratory/Field Visit 6. Web based learning.

	Course Instructor	**Course Coordinator**	**Module Coordinator**	**HOD**
Signature				
Name of the Faculty	**Dr.T.V.Nagalakshmi**	**Dr.V.Parvathi**	**Dr. V.Parvathi**	**Dr. A. Rami Reddy**

PRINCIPAL

5. Pre-requisites: -NIL-

6. Course Educational Objectives (CEOs):

In this course student will learn about

Software development tools like algorithm, Pseudo codes and programming structure. Basic elements 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.

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

CO1: Apply and practice logical formulations to solve some simple problems leading to specific applications.

CO2: Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.

CO3: Design effectively the required programming components that efficiently solve computing problems in real world.

4. Course Articulation Matrix:

Course Code	COs	Programme Outcomes												PSOs		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
17CI60	CO1	2	3								2		2			
	CO2	2	3								2		2			
	CO3	2	3								2		2			
1 = Slight (Low) 2 = Moderate (Medium) 3-Substantial(High)																

8. Course Delivery Plan:

S.NO	TOPIC TO BE COVERED	No.of Classes		Date	DM
		As per the Schedule	Taken		
1	Introduction to Computer	3			2,5
2	Introduction to Compiler	3			2,5
3	CYCLE I	3			2,5
4	CYCLE II	6			2,5
5	CYCLE III	6			2,5
6	CYCLE IV	6			2,5
7	CYCLE V	3			2,5
8	CYCLE VI	6			2,5
9	CYCLE VII	3			2,5
10	CYCLE VIII	3			2,5
11	Practice Session	3			3
12	Internal Lab Exam	3			4

Delivery Methods (DM):

1. Chalk & Talk 2. ICT Tools 3. Tutorial 4. Assignment/Test/Quiz
5. Laboratory/Field Visit 6. Web based learning.

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty				

Head of the Department

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING(Autonomous)

Department of Mechanical Engineering

Computer Aideded Engineering Drawing

Schedule of Experiments

I SEM INFORMATION TECHNOLOGY A.Y:2017-18

S.No	Date	Name of the Experiment
1	13-07-2017	Introduction To Engineering Drawing
2	20-07-2017	Introduction To Engineering Drawing
3	27-07-2017	Introduction To Engineering Drawing
4	26-07-2017	Introduction To Engineering Drawing
5	03-08-2017	Experiment-1
6	10-08-2017	Experiment-2
7	17-08-2017	Experiment-3
8	24-08-2017	Experiment-4
9	14-09-2017	Experiment-5
10	21-09-2017	Experiment-6
11	05-10-2017	Experiment-7
12	05-10-2017	Experiment-8
13	05-10-2017	Experiment-9
14	05-10-2017	Experiment-10
15	12-10-2017	Experiment-11
16	26-10-2017	Experiment-12

17	02-11-2017	Internal Examination

Lab Incharge

Head of the Department

LAKKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION 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., IT Branch

ACADEMIC YEAR : 2017-18

COURSE NAME & CODE : Electronic Devices and Circuits – 17EC02

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : K Sasi Bhushan, Associate Professor **COURSE**

COORDINATOR : K Sasi Bhushan, Associate Professor

COURSE OBJECTIVE : This course provides the knowledge on basic electronic devices like Diodes, Transistors and FETs operation. The course also gives the idea about design of biasing techniques required for transistors and rectifiers using diodes.

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

CO	Statement At the end of the course, student will be able to	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
1	Recognize the transport phenomena of charge carriers in a semiconductor.	3	--	--	--	--	--	--	--	--	--	2	2	--	3	--
2	Analyze the different types of diodes, operation and its characteristics.	3	--	--	3	--	2	--	--	--	--	2	2	2	3	--
3	Apply different types of filters in AC to DC conversion.	3	--	--	3	--	2	--	--	--	--	2	2	2	3	2
4	Describe Bipolar Junction Transistors and Field Effect Transistors.	3	--	3	2	--	--	--	--	--	--	2	2	1	3	2
5	Analyze the different biasing techniques used in BJTs and FETs.	3	--	3	2	--	2	--	--	--	--	2	2	2	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).

BOS APPROVED TEXT BOOKS:

1 Jacob Millman, Christos C Halkias, "Electronic Devices and Circuits", Tata McGraw Hill,Publishers, New Delhi.

BOS APPROVED REFERENCE BOOKS:

1 R.L. Boylestad and Louis Nashelsky, Electronic Devices and Circuits, Pearson/Prentice Hall Publishers.

2 Thomas L.Floyd, Electronic Devices, Pearson Education Publishers.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT-I : Semiconductor Physics

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 Subject	1	11-07-17		TLM1	
2.	Course Outcomes	1	11-07-17		TLM1	
3.	Introduction to UNIT-I	1	11-07-17		TLM1	
4.	Energy band theory of crystals	1	11-07-17		TLM1	
5.	Energy band theory of Insulators, Conductors, Semiconductors	1	12-07-17		TLM1	
6.	Mobility and Conductivity	1	13-07-17		TLM1	
7.	Energy distribution of electrons in metals	1	14-07-17		TLM1	
8.	Electrons and Holes in an Intrinsic Semiconductors	1	15-07-17		TLM1	
9.	Conductivity of a semiconductor	1	18-07-17		TLM1	
10.	Carrier concentration in an intrinsic Semiconductors	1	18-07-17		TLM1	
11.	**TUTORIAL-1**	1	19-07-17		TLM1	
12.	Donor and Acceptor Impurities	1	20-07-17		TLM1	
13.	Mass Action Law	1	22-07-17		TLM1	
14.	Charge densities in semiconductor, Diffusion	1	25-07-17		TLM1	
15.	Carrier Lifetime	1	26-07-17		TLM1	
16.	Continuity Equation	1	27-07-17		TLM1	
17.	Hall Effect	1	29-07-17		TLM3,4	
18.	**TUTORIAL-2**	1	29-07-17		TLM3,4	
19.	Assignment/Quiz	1	01-08-17		TLM6	
No. of classes required to complete UNIT-I		21	No. of classes taken:			

UNIT-II : Junction Diode and Special Diodes

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
20.	Qualitative theory of PN Junction	1	02-08-17		TLM1	
21.	Band Structure of an open circuited PN junction	1	03-08-17		TLM1	
22.	Current components in a PN Diode	1	05-08-17		TLM1	
23.	PN Junction diode operation in Forward bias and Reverse bias	1	08-08-17		TLM1	
24.	Qualitative theory of the PN diode currents- Diode current equation	1	09-08-17		TLM1	
25.	Law of the junction ,Forward currents, Reverse Saturation Current	1	10-08-17		TLM1	
26.	Volt Ampere Characteristics of Diode, Temperature dependence of Diode, Diode Resistance	1	10-08-17		TLM1	
27.	Diode Capacitance- Transition &Diffusion	1	16-08-17		TLM1	
28.	Laser, Zener Diode	1	17-08-17		TLM1	
29.	Tunnel Diode, Varactor Diode	1	19-08-17		TLM1	
30.	Photo Diode, Avalanche Photo Diode	1	22-08-17		TLM1	
31.	LED, PIN Diode	1	23-08-17		TLM1	

32.	Liquid crystal diode, Solar Cell	1	24-08-17		TLM1	
33.	**TUTORIAL-3**	1	26-08-17		TLM3,4	
34.	**TUTORIAL-4**	1	29-08-17		TLM3,4	
35.	Assignment/Quiz	1	30-08-17		TLM6	
No. of classes required to complete UNIT-II		18	No. of classes taken:			

UNIT-III : Rectifiers, Filters and Regulators

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
36.	Half wave rectifier with characteristics	1	31-08-17		TLM1	
37.	Full wave rectifier with center tap transformer and its characteristics	1	02-09-17		TLM1	
38.	Full Wave Rectifier with Bridge circuit and its characteristics	1	05-09-17		TLM1	
39.	Comparison of rectifiers, Harmonic components in a rectifier circuits.	1	13-09-17		TLM1	
40.	**TUTORIAL-5**	1	14-09-17		TLM1	
41.	Inductor Filter, Capacitor Filter	1	16-09-17		TLM1	
42.	L-Section Filter, π-Section Filter	1	19-09-17		TLM1	
43.	Multiple L-Section and Pi-Section Filters	1	20-09-17		TLM1	
44.	Voltage Regulation using Zener diode	1	21-09-17		TLM1	
45.	design of a Zener regulator (Series & Shunt)	1	23-09-17		TLM3,4	
46.	**TUTORIAL-6**	1	26-09-17		TLM3,4	
47.	Assignment/Quiz	1			TLM6	
No. of classes required to complete UNIT-III		12	No. of classes taken:			

UNIT-IV : Bipolar Junction Transistors and Field Effect 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
48.	Introduction to Three terminal Devices	1	27-09-17		TLM1	
49.	PNP and NPN Transistors	1	03-10-17		TLM1	
50.	Transistor Current components-Emitter Efficiency, Transport Factor	1	04-10-17		TLM1	
51.	Large Signal Current Gain	1	05-10-17		TLM1	
52.	Common Base, Base width modulation	1	06-10-17		TLM1	
53.	Common Emitter	1	07-10-17		TLM1	
54.	Common Collector	1	11-10-17		TLM1	
55.	Ebers-Moll Model.	1	12-10-17		TLM1	
56.	Comparison between FET and BJT	1	17-10-17		TLM1	
57.	JFET Construction, Operation, Classification	1	18-10-17		TLM1	
58.	Drain and Transfer Characteristics of JFET	1	19-10-17		TLM1	

59.	MOSFET Characteristics-Enhancement	1	24-10-17		TLM1	
60.	Depletion Mode	1			TLM1	
61.	Photo Transistor	1	31-10-17		TLM1	
62.	Silicon Controlled Rectifier	1	01-11-17		TLM1	
63.	Uni-junction Transistor, UJT relaxation oscillator	1	03-11-17		TLM1	
64.	**TUTORIAL-7**	1	04-11-17		TLM3,4	
65.	**TUTORIAL-8**	1	07-11-17		TLM3,4	
66.	Assignment/Quiz	1	08-11-17		TLM3,4	
No. of classes required to complete UNIT-IV		19	No. of classes taken:			

UNIT-V : BJT Biasing and FET Biasing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
67.	Transistor Biasing and Stability-DC load line, Operating Point, AC load line	1	09-11-17		TLM1	
68.	Thermal Instability, Stability factors S,S_I,S_{II}	1	11-11-17		TLM1	
69.	Fixed Bias	1	14-11-17		TLM1	
70.	Collector to Base Bias	1	15-11-17		TLM1	
71.	Self Bias	1	16-11-17		TLM1	
72.	Thermal Concepts- Thermal Runaway, Thermal Resistance, Thermal Stability, Condition to avoid Thermal Runaway	1	18-11-17		TLM1	
73.	Bias Compensation Techniques-Diode Compensation for V_{BE}, Diode Compensation for I_{CO}	1	21-11-17		TLM1	
74.	Different FET biasing methods (fixed, Self & Voltage divider Bias)	1	22-11-17		TLM1	
75.	**TUTORIAL-9**	1	23-11-17		TLM3,4	
76.	**TUTORIAL-10**	1	25-11-17		TLM3,4	
77.	Assignment/Quiz	1	28-11-17		TLM3,4	
No. of classes required to complete UNIT-V		11	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	HOD Sign Weekly
78.	Diode applications	1			TLM1	
79.	Transistor act as amplifier	1			TLM1	

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	10-07-2017	01-09-2017	8 W
I Mid Examinations	04-09-2017	08-09-2017	1 W
II Phase of Instructions	09-09-2017	11-11-2017	9W
II Mid Examinations	13-11-2017	17-11-2017	1 W
Preparation and Practicals	18-11-2017	29-11-2017	1½ W
Semester End Examinations	30-11-2017	08-12-2017	2W

EVALUATION PROCESS:

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

Mr.K.Sasi Bhushan	Mr.K.Sasi Bhushan	Mr.Y.Amar Babu	Prof.B.Ramesh Reddy
Course Instructor	**Course Coordinator**	**Module Coordinator**	**BOS Chairman&HOD**

	LAB SCHEDULE	Date:
	Sub Name: Engineering Chemistry Lab **Class: I B.Tech IT** **Semester: I**	**3/7/2017** **To** **11/11/2017**

No. of Periods	Date	Lab Cycles	Signature
1.	15-07-17	Introduction to Chemistry laboratory – Molarity, Normality, Primary, secondary standard solutions, Volumetric titrations, Quantitative analysis, Qualitative analysis, etc	
2.	22-07-17	Preparation of standard solutions, concept of standardisation, dilution to get solution of required normality	
3.	29-07-17	Model experiment - Determination of HCl using standard Na_2CO_3 solution.	
4.	05-08-17	Determination of alkalinity of water sample	
5.	19-08-17	Estimation of $Mg^{+2}/Zn^{+2}/Ca^{+2}$ in given solution by using standard EDTA solution	
6.	26-08-17	Preparation of Urea formaldehyde resin. Preparation of Phenol formaldehyde resin.	
7.	02-09-17	Estimation of Mohr's salt by using potassium permanganate	
8.	23-09-17	Estimation of Mohr's salt by using potassium dichromate.	
9.	30-09-17	Estimation of $KMnO_4$ by using Oxalic acid.	
10.	07-10-17	Estimation of amount of HCl conductometrically using standard NaOH solution	
11.	14-10-17	Estimation of amount of HCl potentiometrically using NaOH solution	
12.	21-10-17	Determination of pH of the given sample solution using pH meter.	
13.	28-10-17	Determination of pH of the given sample solution using pH meter.	
14.	04-11-17	Internal Examination (Batch-I)	
15.	11-11-17	Internal Examination (Batch-II)	

	Course Instructor	Course Coordinator	Module Coordinator	HOD
Signature				
Name of the Faculty	**Dr.T.V.Nagalakshmi**	**Dr.V.Parvathi**	**Dr. V.Parvathi**	**Dr. A. Rami Reddy**