LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution

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

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

hodcse@lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

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

ACADEMIC YEAR : 2021-22

COURSE NAME & CODE : Data Mining and Data Warehousing (DMDW) – 17CI16

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr. A. S. R. C. Murthy

COURSE COORDINATOR: Mr. G. V. Suresh

PRE-REQUISITE: *DBMS, Probability and Statistics.*

COURSE OBJECTIVE: Students will be enabled to understand and implement classical models and algorithms in data warehousing and data mining. They will learn how to analyze the data, identify the problems, and choose the relevant models and algorithms to apply. They will further be able to assess the strengths and weaknesses of various methods and algorithms and to analyze their behavior.

COURSE OUTCOMES (COs): At the end of the course, students are able to

CO 1	Understand the basic concepts of data warehouse & data mining.
CO 2	Apply data pre-processing, generalization and data characterization techniques to provide suitable input for a range of data mining algorithms.
CO 3	Analyze and provide solutions for real world problems using mining association techniques.
CO 4	Examine the different classification & clustering techniques in data mining.
CO5	Apply data mining techniques to complex data objects like spatial data, multimedia data and web mining.

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	1	-	-	-	-	-	-	-	-	1	-	3	-
CO2	3	3	1	1	1	-	-	-	-	-	-	1	1	3	-
CO3	2	3	3	-	1	1	-	-	-	-	-	2	1	3	-
CO4	3	3	3	1	1	1	-	-	-	-	-	2	2	3	-
CO5	2	3	2	-	-	-	-	-	-	-	-	1	1	3	-

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

1- Lightly(33%) **2 -** Moderately(66%), **3 -** Strongly (100%).

BOS APPROVED TEXT BOOKS:

T1 J. Han, M. Kamber, "Data Mining: Concepts and Techniques", Harcourt India / Morgan Kauffman, 2001

BOS APPROVED REFERENCE BOOKS:

R1 SamAnahory,DennisMurry, "DataWarehousing in the real world", Pearson Education 2003.

R2 DavidHand,HeikkiManila,PadhraicSymth, "Principles of Data Mining", PHI 2004.

R3 W.H.Inmon,"Building the Data Warehouse", Wiley, 3rd Edition, 2003.

R4 PaulrajPonniah, "Data Warehousing Fundamentals", Wiley-Interscience Publication, 2003

PART-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I: Introduction to Data mining and Data warehouse

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.	Fundamentals of data mining	1	23-02-22		**TLM1**	CO1	
2.	Data Mining functionalities and classification of data mining systems	1	24-02-22		**TLM1**	CO1	
3.	Major issues in data mining, Applications of data Mining	1	25-02-22		**TLM1**	CO1	
4.	Introduction to Data warehouse	1	26-02-22		**TLM1**	CO1	
5.	Introduction-Data, Info. Importance of DMDW	1	02-03-22		**TLM1**	CO1	
6.	Data warehouse Need, OLTP vs OLAP	1	03-03-22		**TLM1**	CO1	
7.	Multidimensional data models	1	04-03-22		**TLM1**	CO1	
8.	DWH Architecture	1	05-03-22		**TLM1**	CO1	
9.	Data warehouse Implementation	1	09-03-22		**TLM2**	CO1	

10.	Further development of data cube Technology, From DWH TO Data Mining	1	10-03-22		**TLM2**	CO1	
No. of classes required to complete UNIT-I		10	No. of classes taken:				

UNIT-II: Data Pre-Processing

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
11.	Why we need pre-processing	1	11-03-22		**TLM1**	CO2	
12.	Data Cleaning	1	16-03-22		**TLM1**	CO2	
13.	Data Integration	1	17-03-22		**TLM1**	CO2	
14.	Data Transformation	1	19-03-22		**TLM1**	CO2	
15.	Data Reduction	1	23-03-22		**TLM2**	CO2	
16.	Discretization & Concept hierarchy generation	1	24-03-22		**TLM3**	CO2	
17.	Data mining primitives	1	25-03-22		**TLM2**	CO2	
18.	DMQL,Concept description and Characterizations	1	26-03-22		**TLM2**	CO2	
19.	Class Comparisons, Data generalization and summarization based on characterization	1	30-03-22		**TLM2**	CO2	
20.	Analytical characterization Discrimination between different classes	1	31-03-22		**TLM2**	CO2	
21.	Descriptive Statistical Measures	1	01-04-22		**TLM2**	CO2	
No. of classes required to complete UNIT-II		11	No. of classes taken:				

UNIT-III: Association Rule mining

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
22.	Association rule mining,	1	06-04-22		**TLM1**	CO3	
23.	Frequent pattern, support and confidence	1	07-04-22		**TLM2**	CO3	
24.	Apriori algorithm	2	08-04-22 09-04-22		**TLM1**	CO3	
25.	FP growth algorithm	2	21-04-22 22-04-22		**TLM1**	CO3	
26.	Single dimensional Boolean association from transitional database	1	23-04-22		**TLM3**	CO3	
27.	Multi-level association rules from transitional databases	1	27-04-22		**TLM1**	CO3	
28.	From association rule mining to correlation analysis	1	28-04-22		**TLM2**	CO3	
29.	Constraint based association rule mining	1	29-04-22		**TLM2**	CO3	
No. of classes required to complete UNIT-III		10	No. of classes taken:				

UNIT-IV: Classification and Perdition Analysis

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
30.	Issues regarding classification and	1	07/06/21		**TLM1**	CO4	
31.	Classification by decision tree induction	2	29-04-22		**TLM1**	CO4	
32.	Bayesian classification	1	30-04-22		**TLM1**	CO4	
33.	Support vector	1	04-05-22		**TLM2**	CO4	

	machine						
34.	Classification based on concepts from association rule mining	1	05-05-22		**TLM1**	CO4	
35.	Rule based induction algorithm	1	06-05-22		**TLM1**	CO4	
36.	Prediction	1	07-05-22		**TLM1**	CO4	
37.	Classifier accuracy	1	11-05-22		**TLM1**	CO4	
38.	No. of classes required to complete UNIT-IV	9	No. of classes taken:				

UNIT-V: clustering and applications of data mining

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
39.	Types of data in cluster analysis	1	12-05-22		**TLM2**	CO5	
40.	A categorization of major clustering methods	1	13-05-22		**TLM2**	CO5	
41.	Partitioning methods	1	18-05-22		**TLM2**	CO5	
42.	Density based methods	2	19-05-22 20-05-22		**TLM2**	CO5	
43.	Grid based methods	1	21-05-22		**TLM2**	CO5	
44.	Model based clustering methods	1	25-05-22		**TLM2**	CO5	
45.	Outlier analysis	2	26-05-22		**TLM3**		
46.	Overview of data mining applications	1	27-05-22		**TLM2**	CO5	
47.	Web mining introduction, terminology and characteristics	2	28-05-22 01-06-22		**TLM2**	CO5	
48.	Web content mining, Web usage mining	2	02-06-22		**TLM2**	CO5	

	and Web structure mining		03-06-22				
No. of classes required to complete UNIT-V		10	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
49.	Advanced topics in mining , Research topics related to social networking	1	04-06-22					

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 Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60

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

Course Instructor **Course Coordinator** **Module Coordinator** **HOD**

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution

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

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

hodcse@lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PART – A

Name of Course Instructor : **Mr. K.SASI BHUSHAN**

Course Name & Code : **MICROPROCESSORS AND MICROCONTROLLERS** [17EC22]

L-T-P Structure : 3-0-0

Credits : 3

Program/Sem/Sec : B.Tech., CSE., VI-Sem., Sections- A

A.Y : 2021-22

Pre-requisites: Digital Circuits, Computer organization

Course Educational Objectives: In this course student will learn about the Architecture of 8086 Microprocessor and 8051 Microcontroller and their Assembly Language Programming, interfacing Memory and Various Peripherals with 8086 Microprocessor/8051 Microcontroller and concepts of Interrupts and Serial Communication in reference to 8086

COURSE OUTCOMES (COs): At the end of the course, students are able to

CO 1 : **Understand the** architecture and operation of 8086 µprocessor & 8051µcontroller

CO 2 : **Apply** the instructions of 8086/8051 for various applications.

CO 3 : **Analyze** the operation of peripherals and devices for interfacing applications.

CO4 : **Design** a 8086/8051 based system by interfacing memory, peripherals and I/O devices

COURSE ARTICULATION MATRIX:

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

Note: 1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High), no correlation **'-'**

BOS APPROVED TEXT BOOKS:

T1 Douglas V. Hall, "Micro Processors & Interfacing", TMH, 2007.

T2 A. K. Ray and K.M. Bhurchandi, Advanced Microprocessor And Peripherals,2nd Edition TMH Publishers.

T3 Muhammad Ali Mazidi, Janice GillispieMazidi, Rolin D. Mckinlay "Microcontrollers and Embedded System", Pearson Education Publishers, 2nd Edition

BOS APPROVED REFERENCE BOOKS:

R1 Raj Kamal, Microcontrollers Architecture, Programming, Interfacing and System Design, Pearson Education Publishers.
R2 J. K. Uffenbeck, "The 8088 and 8086 Micro Processors", PHI, 4th Edition, 2003.
R3 Ajay Deshmukh, "Micro Controllers-Theory and Applications", Tata McGraw Hill Publishers.
R4 Kenneth J. Ayala, "The 8051 Micro Controller", Cengage Learning Publishers, 3rd Edition, 2000.

Prescribed Syllabus:
17EC22 - MICROPROCESSORS AND MICROCONTROLLERS

UNIT – I
Microprocessor Architecture: Introduction to Microprocessors-Purpose of a Microprocessor, different types of Microprocessors, their features and their comparison; 8086 Microprocessor- Architecture , Special functions of General purpose registers, 8086 flag register and function of 8086 Flags, Addressing modes of 8086.

Instruction Set: Instruction set of 8086, Assembly language programs involving logical, Branch and Call instructions, Sorting, Evaluation of Arithmetic Expressions, String manipulation, Assembler directives, simple programs, procedures and macros.

UNIT – II
8086 Memory and I/O Interfacing: Pin diagram of 8086, Minimum mode and maximum mode of operation, Timing diagram, Memory (Static RAM & EPROM) and I/O interfacing to 8086. Interrupt structure of 8086, Interrupt Vector table, Interrupt service routines.

UNIT – III
Peripherals and Devices: DMA Controller 8237, Interrupt Controller 8259 and Cascading, USART 8251 8255 PPI – various modes of operation, Keyboard, D/A and A/D converter interfacing.

UNIT – IV
Microcontroller: 8051 Microcontroller Architecture, Pin Diagram, Addressing modes, Instruction Set and Programs, 8051 Memory and I/O interfacing .

UNIT – V
8051 Interfacing: Modes of timer operation, Serial port operation, Interrupt structure of 8051, Interfacing of Seven segment Displays, Stepper Motor and Serial/Parallel Printer

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I : Microprocessor Architecture & Instruction Set

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.	Discussion of Syllabus, Course Outcomes and Introduction to µprocessors	1	21-02-2022			
2.	Types of µprocessors, features & comparison, µprocessor- Architecture	1	22-02-2022			

3.	General purpose registers , their special functions, Flag register and function of flags	1	23-02-2022			
4.	Addressing modes of 8086	1	28-02-2022			
5.	Instruction set of 8086	1	01-03-2022			
6.	Assembler directives, Procedures and macros	1	02-03-2022			
7.	Assembly language programs involving logical, Branch and Call instructions.	1	07-03-2022			
8.	Assembly language programs for Sorting and Arithmetic Expressions	1	08-03-2022			
9.	String manipulation Instructions	1	09-03-2022			
10.	**Tutorial,/Assignment**	1	14-03-2022			

UNIT-II : 8086 Memory and I/O Interfacing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
11.	Pin diagram of 8086	1	15-03-2022			
12.	Minimum mode of operation	1	16-03-2022			
13.	Maximum mode of operation	1	21-03-2022			
14.	Timing diagrams	1	22-03-2022			
15.	Memory interfacing to 8086	1	23-03-2022			
16.	Static RAM , EPROM and I/O interfacing to 8086	1	28-03-2022			
17.	Interrupt structure of 8086	1	29-03-2022			
18.	Interrupt service routines	1	30-03-2022			
19.	Interrupt Vector table	1	04-04-2022			
20.	**Tutorial,/Assignment**	1	05-04-2022			
21.	**Revision for I-Mid Examination**	1	06-04-2022			

UNIT-III : Peripherals and Devices

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
22.	DMA Controller 8237	1	18-04-2022			
23.	Interrupt Controller 8259	1	19-04-2022			
24.	Cascading of 8259	1	20-04-2022			
25.	USART 8251	1	25-04-2022			
26.	8255 PPI Modes of operation	1	26-04-2022			
27.	Keyboard interfacing	1	27-04-2022			
28.	Digital to Analog Converter interfacing	1	02-05-2022			
29.	Analog to Digital Converter interfacing	1	03-05-2022			
30.	**Tutorial,/Assignment**	1	04-05-2022			

UNIT-IV : Microcontroller

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.	8051 µcontroller Architecture	1	09-05-2022			
32.	8051Pin Diagram	1	10-05-2022			
33.	Addressing modes of µcontroller	1	11-05-2022			
34.	8051 Instruction Set	1	16-05-2022			
35.	8051 Programs	1	17-05-2022			
36.	8051 Memory interfacing & I/O interfacing	1	18-05-2022			
37.	**Tutorial,/Assignment**	1	23-05-2022			

UNIT-V : 8051 Interfacing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
38.	Modes of timer operation	1	24-05-2022			
39.	Serial port operation	1	25-05-2022			
40.	Interrupt structure of 8051	1	30-05-2022			
41.	Interfacing of Seven segment Displays, Stepper Motor and Serial/Parallel Printer interfacing	1	31-05-2022			
42.	**Tutorial,/Assignment**	1	01-06-2022			

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

Academic Calendar: 2019 – 20 (IV Semester)

B.Tech VI Semester - 2017 Admitted Batch			
Class work Commence From	**21-02-2022**		
Description	**From**	**To**	**Weeks**
I Phase of Instructions	**21-02-2022**	09-04-2022	7 Weeks
I Mid Examinations	11-04-2022	16-04-2022	1 Week
II Phase Instructions	18-04-2022	**04-06-2022**	7 Weeks
II Mid Examinations	06-06-2022	11-06-2022	1 Week
Preparation & Practicals	13-06-2022	18-06-2022	1 Week
Semester End Examinations	20-06-2022	02-07-2022	2 Weeks

EVALUATION PROCESS:

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
Total Marks = CIE + SEE	**100**

CO 1	**Understand** the architecture and operation of 8086 µprocessor & 8051µcontroller	Describe, Explain, Paraphrase, Restate ,Associate, Contrast, Summarize, Differentiate, Interpret, Discuss
CO 2	**Apply** the instructions of	Calculate, Predict, Apply, Solve, Illustrate, Use,

	8086/8051 for various applications.	Demonstrate, Determine, Model, Experiment, Show, Examine, Modify
CO 3	**Analyze** the operation and interfacing of peripherals like memory and I/O devices to 8086/8051 for different applications.	Classify, Outline, Break down, Categorize, Analyze, Diagram, Illustrate, Infer, Select
CO 4	**Design** a 8086/8051 based system by interfacing memory, peripherals and I/O devices	Categorize, Analyze, Illustrate, Infer Select

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 modeling 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:	**Communication:** Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.
PSO 2:	**VLSI and Embedded Systems:** 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

PSO 3:	**Signal Processing:** Apply the Signal processing techniques to synthesize and realize the issues related to real time applications

Course Instructor **Course Coordinator** **Module Coordinator** **HOD**

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution

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

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

hodcse@lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : U. RAMBABU
Course Name & Code : Industrial Engineering and management
L-T-P Structure : 3-0-0 Credits : 3
Program/Sem/Sec : B.Tech., CSE., VI-Sem., Sections- A A.Y : 2021-22

PRE-REQUISITE:

Course Objectives: NIL

1. To make students understand management, its principles, contribution to management, organization, and its basic issues and types.
2. To make students understand the concept of plant location and its factors and plant layout and types, method of production and work study importance.
3. To understand the purpose and function of statistical quality control and material management techniques
4. To make students understand the concept of HRM and its functions.
5. To make students understand PERT & CPM methods in effective project management and need of project crashing and its consequence on cost of project.

Course Outcomes:

Upon the Successful Completion of This Course Students Will be Able To:

1. Apply management principles to the particle situations to be able to know which type of business organisation structure suits.
2. Determine decision making relating to the problems in operations and production activities.
3. Apply SQC techniques and to take effective decision making relating to reduce the investment in materials through better control of inventory.
4. Ability to manage people in working environment with the practices of HRM across corporate businesses.
5. Identify the PERT & CPM techniques in effective project management.

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

COs	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO 12	PSO 1	PSO 2	PSO 3
CO1	1						2	2	2	1		1			
CO2					2							1			
CO3		2					2				2	1			
CO4								2	2	2		1			
CO5					2		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).

Textbooks:

T1: Dr. A.R. Aryasri, Management Science, TMH, 10th edition, 2012

References:

R1: Koontz & weihrich – Essentials of management, TMH, 10th edition, 2015
R2: Stoner, Freeman, Gilbert, Management, 6th edition Pearson education, New Delhi, 2004
R3:O. P. Khanna, Industrial engineering and Management
R4: L.S. Srinath, PERT & CPM

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: introduction to Management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
50.	Introduction to Subject & Course Outcomes	1	21-02-2022		TLM1	
51.	Management Introduction and Definition	1	22-02-2022		TLM1	
52.	Nature Importance of management and Functions	1	26-02-2022		TLM2	
53.	Taylor's scientific management theory	1	28-02-2022		TLM2	
54.	Fayal's principles of management	1	05-03-2022		TLM2	
55.	Contribution of Elton mayo & MASLOW theory	1	07-03-2022		TLM2	
56.	Herzberg theory of motivation & Douglas MC Gregor theory of motivation	1	08-03-2022		TLM2	
57.	Organization Basic concept: Authority & responsibility & Delegation of Authority	1	14-03-2022		TLM2	
58.	Span of control & Departmentation and Decentralization	1	15-03-2022		TLM2	
59.	Organization structure: line organization structure, Line, and staff organization &	1	19-03-2022		TLM2	
60.	Functional organization, Committee & Matrix organization	1	21-03-2022		TLM2	
No. of classes required to complete UNIT-I:11				No. of classes taken:		

UNIT-II: Operations Management

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.	Plant location and Factors influencing location	1	22-03-2022		TLM2	
2.	Objectives and Principles of plant layout	1	26-03-2022		TLM2	
3.	types of plant layouts	1	28-03-2022		TLM2	
4.	Methods of production: job batch and mass production	1	29-03-2022		TLM2	
5.	Work study: Basic procedure involved in method study work measurement	1	02-04-2022		TLM2	
6.	Basic procedure involved in method study work measurement	1	04-04-2022		TLM2	
7.	Time study problems	1	05-04-2022		TLM2	
No. of classes required to complete UNIT-II:07				No. of classes taken:		

UNIT-III: Statistical quality control & Materials Management

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.	Statistical quality control Meaning	1	09-04-2022		TLM2	
2.	I MID EXAM		11-04-2022			
3.	I MID EXAM		12-04-2022			

4.	I MID EXAM		16-04-2022			
5.	Variables and attributes & X chart problems and R	1	18-04-2022		TLM2	
6.	C Chart problems AND P Chart problems	1	19-04-2022		TLM1	
7.	Acceptance sampling & Sampling plans & Deming's contribution to quality	1	23-04-2022		TLM2	
8.	Materials management: Objectives of Materials management, Need for inventory control	1	25-04-2022		TLM1	
9.	Purchase procedure, Store records	1	26-04-2022		TLM2	
10.	Methods of inventory control: ABC analysis & EOQ analysis EOQ Problems	1	30-04-2022		TLM2	
11.	Stock levels & Problems on stock levels	1	02-05-2022		TLM2	
No. of classes required to complete UNIT-III:08				No. of classes taken:		

UNIT-IV: Human Resource management (HRM)

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.	Concepts of HRM: Basic functions of HR manager	1	03-05-2022		TLM2	
2.	Manpower planning	1	07-05-2022		TLM2	
3.	Recruitment & Selection & Training and development	1	09-05-2022		TLM2	
4.	Placement, Wage, and salary administration	1	10-05-2022		TLM2	
5.	Promotion, Transfer & Separation &	1	16-05-2022		TLM2	
6.	Performance Appraisal	1	17-05-2022		TLM2	
7.	Job evaluation & Merit rating	1	21-05-2022		TLM2	
No. of classes required to complete UNIT-IV:07				No. of classes taken:		

UNIT-V: Project management

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.	**Project management: Introduction** Early techniques in project management	1	23-05-2022		TLM2	
2.	Network analysis & Rules for drawing of networks and Critical path method	1	24-05-2022		TLM2	
3.	Problems on CPM & Identifying critical path	1	28-05-2022		TLM1	
4.	Programme evaluation and review technique (PERT)	1	30-05-2022			
5.	Project cost analysis, project crashing	1	31-05-2022		TLM1	
6.	Content beyond the syllabus (online trading)	1	04-06-2022			
7.	II MID EXAM	1	06-06-2022		TLM1	
8.	II MID EXAM	1	07-06-2022			
9.	II MID EXAM	1	11-06-2022		TLM1	
No. of classes required to complete UNIT-V:06				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 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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	The ability to apply Software Engineering practices and strategies in software project development using open-source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate an ability to analyze, design and implement database applications.

Course Instructor	Course Coordinator	Module Coordinator	HOD
(U.RAMBABU)	(U.RAMBABU)	(U.RAMBABU)	(Dr.A. Adisesha Reddy)

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B. REDDY NAGAR, MYLAVARAM, NTR DIST., A.P.-521 230.
hodcse@lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222 933, Fax: 08659-22931
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PROGRAM : B.Tech. VI-Sem. (A)

ACADEMIC YEAR : 2021-22

COURSE NAME & CODE : **Data Communications & Computer Networks –17CI17**

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **Dr.K Naga Prasanthi**

COURSE COORDINATOR : **Dr.K Naga Prasanthi**

PRE-REQUISITE: Basic Computer Fundamentals and Concepts

COURSE OBJECTIVE: The students will be able to Build an understanding ofthe fundamental concepts of computer networking and gain expertise in some specific areas of networking such as the design and maintenance of individual networks.

COURSE OUTCOMES (CO): After the completion of this course, student will be able to:
CO1: Understand how the data is transmitted from point-to-point.
CO2: Summarize Data Link Layer Protocols.
CO3: Analyze different Medium Access Control protocols.
CO4: Evaluate different routing protocols and Transport layer protocols.
CO5: Understand the concepts of Presentation and Application Layer Protocols

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**	**2**	**2**											**1**	
CO2	**1**	**2**	**2**									**1**		**1**	
CO3	**1**	**3**	**3**									**1**		**1**	
CO4	**2**	**3**	**3**	**1**								**1**	**1**		
CO5	**2**	**2**	**2**									**1**	**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).

TEXT BOOKS:

T1 1 S. Tanenbaum —Computer Network: Second Ed. Prentice Hall, India.

2 B. A. Frouzan, Data Communication, Tata Mc Graw Hill.

REFERENCE BOOKS:

R1 D. Berekas an R. Gallager, ―Data Networks:, second Ed. Prentice Hall, India.

R2 D. E. Coner, ―Intertworking with TCP/IP‖, Vol-I.Prentice Hall India.

R3 G. E. Keiser, ―Local Area Network‖, Mc Graw Hill, International Ed.

R4 W. Stalling, ―Data & Computer Communications‖, Maxwell Macmillan Internation Ed.

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	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to computer networks Use of Computer Networks	1	21-2-22		TLM2	CO1	T1,T2	
2.	Review of ISO-OSI Model	1	22-2-22		TLM2	CO1	T1	
3.	Introduction to TCP/IP Model	1	25-2-22		TLM2	CO1	T1	
4.	Pulse Code Modulation (PCM) Differential Pulse Code Modulation	2	28-2-22 4-3-22		TLM2	CO1	T1,R3	
5.	Delta Modulation (DM)	1	7-3-22		TLM2	CO1	T1,R3	
6.	Multiplexing Techniques; Frequency Division, Time Division	1	8-3-22		TLM2	CO1	T1,R1	
7.	Transmission Media: Wires, Cables,Fibre Optic.	1	11-3-22		TLM2	CO1	T1,R2	
8.	Error Detection and Correction: Single and parity Check	1	14-3-22		TLM2	CO1	T1,T2	
9.	Cyclic Redundancy Code & Hamming Code.	1	15-3-22		TLM2	CO1	T1	
No. of classes required to complete UNIT-I		10			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.	**DATA LINK LAYER PROTOCOLS**	1	21-3-22		TLM2	CO2	T1,R1	
11.	**Stop and Wait Protocols:** Noise free channels	1	22-3-22		TLM2	CO2	T1,R1	
12.	Noisy channels, performance and efficiency	1	25-3-22		TLM2	CO2	T1,R2	
13.	**Sliding WindowProtocols:** Go Back	2	28-3-22 29-3-22		TLM2	CO2	T1,R3	
14.	Selective Repeat ARQ	1	1-4-22		TLM2	CO2	T1,R2	
15.	performance and efficiency	1	4-4-22		TLM2	CO2	T1,R2	
16.	verification of protocol	1	5-4-22		TLM2	CO2	T1,R3	
17.	HDLC data link protocol	1	8-4-22		TLM2	CO2	T1,R3	
No. of classes required to complete UNIT-II		9			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.	**MEDIUM ACCESS CONTROL SUB LAYER**-Concept of Random Access	1	18-4-22		TLM2	CO3	T1,R3	
19.	Pure ALOHA, throughput characteristics of ALOHA, S-ALOHA	1	19-4-22		TLM2	CO3	T1	
20.	LAN: IEEE 802.3, 802.4 and 802.5 Protocols, performance of Ethernet.	1	22-4-22		TLM2	CO3	T1	
21.	Token Ring Protocol, FDDI Protocol,	1	25-4-22		TLM2	CO3	T1	

	General Principles							
22.	Virtual circuits and datagram's, Windows flow control	1	26-4-22		TLM2	CO3	T1,R2	
23.	Packet Discarding, Traffic Shaping	1	29-4-22		TLM2	CO3	T1	
24.	Choke RSVP, Internetworking using Bridge, Routers and Gateways	1	2-5-22		TLM2	CO3	T1	
No. of classes required to complete UNIT-III		10			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.	**Routing Algorithms:** Optimality principle, shortest path routing - Dijkstra, Flooding and broadcasting	1	6-5-22		TLM2	CO4	T1,R1	
26.	distance vector routing, link state routing	1	9-5-22		TLM2	CO4	T1	
27.	flow based routing, Multicasting routing flow and congestion control, Internet Architecture and Addressing	1	10-5-22		TLM2	CO4	T1	
28.	**Transport Layer:** Design issues, Quality of Services	1	13-5-22		TLM2	CO4	T1	
29.	Primitives Connection Management: Addressing, Connection Establishment and Releases	1	16-5-22		TLM2	CO4	T1	
30.	Flow control and Buffering, Crash recovery	1	17-5-22		TLM2	CO4	T1	
31.	Element of TCP/IP protocol: User Data gram Protocol (UDP)	1	20-5-22		TLM2	CO4	T1	
No. of classes required to complete UNIT-IV		10			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
32.	**Distributed**	1	23-5-22		TLM2	CO5	T1,R3	

	Applications							
33.	Electronic Mail	1	24-5-22		TLM2	CO5	T1,R3	
34.	SMTP and HTTP.	1	27-5-22		TLM2	CO5	T1,R4	
35.	**Overview Cryptography**: Substitutions and Transposition Ciphers	1	30-5-22		TLM2	CO5	T1,R3	
36.	Data Encryption Standard (DES)	1	31-5-22		TLM2	CO5	T1,R3	
37.	RSA algorithm	1	3-6-22		TLM2	CO5	T1,R3	
No. of classes required to complete UNIT-V		5			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

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	1,2,3,4,5	A=5
Evaluation of Quiz Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=10
Evaluation of Mid Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4,5	C=20
Attendance	-	D=5
Cumulative Internal Examination : A+B+C+D	**1,2,3,4,5**	**A+B+C+D=40**
Semester End Examinations	**1,2,3,4,5**	**E=60**
Total Marks: A+B+C+D+E	**1,2,3,4,5**	**100**

PROGRAM 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.

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.

PROGRAM SPECIFIC OUTCOMES

1. PSO1:

The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.

2. PSO2:

The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.

3. PSO3:

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

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Dr.K Naga Prasanthi	Dr.K Naga Prasanthi	Dr.D.V. Subbaiah	Dr. D Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC A & 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 AND ENGINEERING

COURSE HANDOUT

Part-A

PROGRAM : : B.Tech. VI-Sem., CSE-A, R17 Regulations

ACADEMIC YEAR : 2021-22

COURSE NAME & CODE : PRESENTATION SKILLS - 17FE61

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

COURSE CREDITS : 1

COURSE INSTRUCTOR : Ms. K. Sridevi, Asst. Pof.

Ms. M. Anuradha

COURSE COORDINATOR : Dr. B. Samrajya Lakshmi

PRE-REQUISITES : Students should have fundamental knowledge in making conversations in English and be with readiness to speak

Course Educational Objective : To help students make oral presentations, power point presentations, participate in group discussions and write project/research/technical reports/formal letters by gathering information and organizing ideas relevantly and coherently.

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

CO1 : Make power point presentations and oral presentations
CO2 : Use standard vocabulary contextually
CO3 : Manage skillfully through group discussions.
CO4 : Negotiate skillfully for better placement.

Course Articulation Matrix:

Course		**Program Outcomes (POs)**											
	POs→	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
17FE61	**CO1**		1		3		2			3	3		2
	CO2		1		3		2			3	3		2
	CO3		1		3		2			3	3		2
	CO4		1		3		2			3	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 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):

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	23.02.2022		TLM4		
2.	Self Introduction	2	02.03.2022		TLM4	CO1	
3.	JAM- I (prepared)	2	09.03.2022		TLM4	CO1	
4.	JAM-II (Extempore)	2	16.03.2022		TLM4	CO1	
5.	Group Discussion	2	23.03.2022		TLM4, TLM6	CO3	
6.	Group Discussion	2	30.03.2022		TLM4, TLM6	CO3	
7.	Reading Comprehension/Listening Comprehension	2	06.04.2022		TLM3	CO2	
8.	Poster Presentation	2	20.04.2022		TLM2, TLM4	CO1	
9.	Power point Presentation	2	27.04.2022		TLM2, TLM4	CO1	
10.	Vocabulary(one-word substitutes/analogy/idioms)	2	04.05.2022		TLM1, TLM3	CO2	
11.	Letter & Résumé writing	2	11.05.2022		TLM1, TLM3	CO4	
12.	Vocabulary(Synonyms/Antonyms)	2	18.05.2022		TLM1, TLM3	CO2	
13.	Mock Interviews	2	25.05.2022		TLM6	CO4	
14.	Internal Lab Exam		01.06.2022				
15.	Total	26					

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	10 Marks
	Record	10 Marks
Internal Test		10 Marks
Attendance		05 Marks
Viva – Voce During Regular Lab Sessions		05 Marks
Total		**40 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

% 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

Phonemes	05 Marks
Short answers on phonetics	05 Marks
Transcription	10 Marks
Dialogue writing	10 Marks
Presentation	10 Marks
Interview	20 Marks
Total	**60 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)**

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1: To Attain a solid foundation in Electronics & Communication Engineering fundamentals with an attitude to pursue continuing education.
PEO2: To Function professionally in the rapidly changing world with advances in technology
PEO3: To Contribute to the needs of the society in solving technical problems using Electronics & Communication Engineering principles, tools and practices.
PEO4: To Exercise leadership qualities, at levels appropriate to their experience, this addresses issues in a responsive, ethical, and innovative manner

PROGRAMME OUTCOMES (POs)

PO1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. **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.

PO3. **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.

PO4. **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.

PO5. **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.

PO6. **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.

PO7: **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.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: 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.

PO11: 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.

PO12: 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.

Name of the Faculty	Name of Module Coordinator	HOD
Ms. K. Sridevi Ms. M. Anuradha	Dr. B. Samrajya Lakshmi	Dr. A. Rami Reddy

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution

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

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

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

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE HANDOUT

Part-A

PROGRAM : B.Tech.VI Semester, Computer Science Engineering (Section-A)
ACADEMIC YEAR : 2021-22
COURSE NAME & CODE : Employability Enhancement Skills-II – 17PD08
L-T-P STRUCTURE : 1 (L) – 0 (T) -0
COURSE CREDITS : NIL
COURSE INSTRUCTOR : **Mr. T. Bala Krishna, Assistant Professor;**
Mrs. K. Samaikya, Assistant Professor
COURSE COORDINATOR : **Mrs. K. Samaikya, Assistant Professor**
PRE-REQUISITES : Nil

COURSE EDUCATIONAL OBJECTIVES (CEOs):

To develop language & communication skills to augment professional development

To inculcate industry-readiness skills among professional students

To familiarize students with elements of Quantitative techniques, Reasoning required for placement tests.

To acquaint the students with concepts and tools that will serve as building blocks for analytical thinking

To help students in career planning and professional development

COURSE OUTCOMES (COs)

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

CO 1	To identify, analyze and apply quantitative techniques related to qualify in Placement tests.
CO 2	To effectively utilize verbal ability & communication skills to qualify in Placement tests.
CO 3	To effectively communicate in professional as well as social contexts.
CO 4	To apply key soft skills effectively in Job Interviews as well in other professional contexts.
CO 5	Inculcate lifelong learning through personal effectiveness as well as leadership.

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	3	3				3			
CO2	3	3				3	3					3			
CO3	3		3				2					2			
CO4	3					2	3	2				3			
CO5	3	3	3	3		3	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).

SYLLABUS

UNIT – I:
Verbal Ability: Tenses& Conditional Clauses
Quantitative Aptitude: Alligation or Mixture, Simple Interest and Compound Interest

UNIT – II:
Verbal Ability: Sentence Completions
Quantitative Aptitude: Time and work, Pipes and Cistern, Permutations and Combinations, Probability

UNIT – III:
Verbal Ability: Spot the Errors
Quantitative Aptitude: Time and Distance, Problems on trains, Boats and Streams, Races and Games of Skill

UNIT – IV:
Verbal Ability: Jumbled Sentences, Cloze Tests
Quantitative Aptitude: Area, Volume and Surface Areas, Progressions

UNIT – V:
Verbal Ability: Advanced Reading Comprehension
Quantitative Aptitude: Clocks and Calendars, Cubes and Dice

BOS APPROVED TEXT BOOKS:

1. Objective Arithmetic, S. CHAND Publishers.
2. R.S.AGGARWAL, *Verbal & Non-Verbal Reasoning*, S. CHAND Publishers
3. Objective English. Edgar Thorpe, Pearson Education, New Delhi.2009
4. Sanjay Kumar, Pushpa Lata: Communication skills. Oxford, Delhi, 2012
5. Vocabulary Builder for Students of Engineering and Technology (A self – study manual for vocabulary Enhancement) Y.Saloman Raju, Maruthi Publishers

BOS APPROVED REFERENCE BOOKS:

1. Meenakshi Raman, Sangeetha: Technical Communication, Oxford University Press, 2008
2. Baron's Guide on GRE
3. Vocabulary Builder for Students of Engineering and Technology (A self – study manual for vocabulary Enhancement) Y.Saloman Raju, Maruthi Publishers
4. Dinesh Khattar, *The Pearson Guide to Quantitative Aptitude*, Pearson Education
5. M. Tyra, *Magical Book on Quicker Maths*, BSC Publishers Quantitative Aptitude by Arun Sharma

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

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
38.	Introduction –Alligation or Mixture	1	23-02-2022		**TLM1**	CO1	T1, T2	
39.	Introduction to course- Tenses	1	25-02-2022		**TLM1**	CO1	T1, T2	
40.	Problems on Alligation or Mixture	1	02-03-2022		**TLM1**	CO1	T1, T2	
41.	Tenses worksheet	1	04-03-2022		**TLM1**	CO1	T1, T2	
42.	Simple Interest & Compound Interest	1	09-03-2022		**TLM1**	CO1	T1, T2	
43.	Conditional Clauses	1	11-03-2022		**TLM1**	CO1	T1, T2	
44.	Problems on Simple Interest & Compound Interest	1	16-03-2022		**TLM1**	CO1	T1, T2	
No. of classes required to complete UNIT-I:		7			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
1.	Time and Work, Pipes and Cistern	1	23-03-2022		**TLM1**	CO2	T1, T2	
2.	Sentence Completion	1	25-03-2022		**TLM1**	CO2	T1, T2	
3.	Permutations and Combinations	1	30-03-2022		**TLM1**	CO2	T1, T2	
4.	Sentence Completion	1	01-04-2022		**TLM1**	CO2	T1, T2	
5.	Probability	1	06-04-2022		**TLM1**	CO2	T1, T2	
6.	Worksheet	1	08-04-2022		**TLM1**	CO2	T1, T2	
7.	**I Mid Examinations**	6 days	11-04-2022 to 16-04-2022					
No. of classes required to complete UNIT-II:		6			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
1.	Error spotting	1	20-04-2022		**TLM1**	CO3	T1, T2	
2.	Time and Distance	1	22-04-2022		**TLM1**	CO3	T1, T2	
3.	Error spotting worksheet	1	27-04-2022		**TLM1**	CO3	T1, T2	
4.	Problems on Trains, Boats and Streams	1	29-04-2022		**TLM1**	CO3	T1, T2	
5.	Error spotting worksheet	1	04-05-2022		**TLM1**	CO3	T1, T2	
6.	Races and Games of Skill	1	06-05-2022		**TLM1**	CO3	T1, T2	
No. of classes required to complete UNIT-III		6			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
1.	Jumbled sentences	1	11-05-2022		**TLM1**	CO4	T1, T2	
2.	Area, Volumes and Surface Area	1	13-05-2022		**TLM1**	CO4	T1, T2	
3.	Jumbled sentences worksheet	1	18-05-2022		**TLM1**	CO4	T1, T2	
4.	Progressions	1	20-05-2022		**TLM1**	CO4	T1, T2	
No. of classes required to complete UNIT-IV		4			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
1.	Advanced Reading Comprehension passages	1	25-05-2022		**TLM1**	CO5	T1, T2	
2.	Clocks & Calendars	1	27-05-2022		**TLM1**	CO5	T1, T2	
3.	Advanced Reading Comprehension passages	1	01-06-2022		**TLM1**	CO5	T1, T2	
4.	Cubes and Dice	1	03-06-2022		**TLM1**	CO5	T1, T2	
5.	**II Mid Examinations**	6 days	6-6-2022 to 11-6-2022					
No. of classes required to complete UNIT-V : 4					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
1.	Advanced Topics in Unit I	1			**TLM1**	CO1	T1, T2, R1 to R5	
2.	Advanced Topics in Unit II	1			**TLM1**	CO2		
3.	Advanced Topics in Unit III	1			**TLM1**	CO3		
4.	Advanced Topics in Unit IV	1			**TLM1**	CO4		
5.	Advanced Topics in Unit V	1			**TLM1**	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

ACADEMIC CALENDAR:

Description	From	To	Weeks
Commencement of Class Work: 21-02-2022			
I Phase of Instructions	21-02-2022	09-04-2022	7 W
I Mid Examinations	11-04-2022	16-04-2022	1 W
II Phase of Instructions	18-04-2022	04-06-2022	7 W
II Mid Examinations	06-06-2022	11-06-2022	1 W
Preparation and Practical's	13-06-2022	18-06-2022	1 W
Semester End Examinations	20-06-2022	02-07-2022	2 W

Part - C

EVALUATION PROCESS: R17 Regulation

Evaluation Task	Marks
Cumulative Internal Examination (CIE) :	100
Total Marks = CIE	100

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1: Pursue higher education, entrepreneurship and research to compete at global level.
PEO2: Design and develop products innovatively in the area of computer science and engineering and in other allied fields.
PEO3: Function effectively as individuals and as members of a team in the conduct of interdisciplinary projects; and even at all the levels with ethics and necessary attitude.
PEO4: Serve ever-changing needs of the society with a pragmatic perception.

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.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO1: The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.
PSO2: The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO3: To inculcate an ability to analyze, design and implement database applications.

Position	***Course Instructor***	***Course Coordinator***	***Module Coordinator***	***HOD***
Name	**K.SAMAIKYA/** **T. BALA KRISHNA**	**K.SAMAIKYA**	**Dr. SUJITH KUMAR RATH**	**Dr. SUJITH KUMAR RATH**
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.
hodcse@lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : B.SIVARAMAKRISHNA
Course Name & Code : **ANDROID TECHNOLOGIES & 17CS05**
L-T-P Structure : 2-2-0 **Credits:** 3
Program/Sem/Sec : B.Tech.–CSE/VI Sem/Sec-B **A.Y.** : 2021-22

PRE-REQUISITE: Knowledge in Java Programming

COURSE EDUCATIONAL OBJECTIVES (CEOs): This course is designed to learn the basics of Android platform and get to understand the application lifecycle and able implement applications using latest android concepts.

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

CO1	**Understand** the fundamentals of Android Platform
CO2	**Design** UI using various UI Components of Android Platform
CO3	**Develop** android apps using Intents & Broadcast receivers of Android Platform
CO4	**Analyze** different data repositories in Android Platform
CO5	**Explore** various advanced concepts in Android Platform

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	2	2	-	-	-	-	-	-	-	-	-	1	2	-	-
CO2	2	1	3	-	3	-	-	-	-	-	-	1	3	-	-
CO3	2	2	3	-	3	-	-	-	-	-	-	1	3	-	-
CO4	2	1	2	-	3	-	-	-	-	-	-	1	2	-	3
CO5	2	1	2	-	3	1	-	-	-	-	-	1	3	-	3

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

TEXT BOOKS:

T1 Reto Meier, ―Professional Android 4 Application Development‖, Wiley India (Wrox), 2012.

T2 James C Sheusi, ―Android Application Development for Java Programmers‖, Cengage Learning, 2013.

REFERENCE BOOKS:

R1 Wei-Meng Lee, ―Beginning Android 4 Application Development‖, Wiley India (Wrox), 2013

R2 https://developer.android.com/index.html

R3 https://www.tutorialspoint.com/android/index.htm

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: INTRODUCTION TO ANDROID PLATFORM

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.	Overview (Why Android?, Features, Applications, History)	1	21/02/2022			
2.	Environment Setup	1	22/02/2022			
3.	Architecture	1	25/02/2022			
4.	Emulator, Dalvik Virtual Machine	1	26/02/2022			
5.	Application Components	1	28/02/2022			
6.	Resources, Manifest File	1	04/05/2022			
7.	Android Application Life Cycle – Activities	1	05/03/2022			
8.	Activity Life Cycle	1	07/03/2022			
9.	States and its Monitoring	1	08/03/2022			
10.	Services – Services States	1	11/03/2022			
11.	Life Cycle of States	1	14/03/2022			
12.	**Tutorial – 1**	1	15/03/2022			
No. of classes required to complete UNIT-I: 12				**No. of classes taken:**		

UNIT-II: ANDROID USER INTERFACE

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.	**UI Components:** View, TextView, ImageView	1	19/03/2022			
2.	Button, EditText	1	21/03/2022			
3.	Spinner, Check Box, Radio Button	1	22/03/2022			
4.	Rating Bar, Switch, Seek Bar, Search View	1	25/03/2022			
5.	**Measurements:** Device and Pixel Density Independent measuring units	2	26/03/2022			
6.	**UI Layouts:** Linear, Relative, Constraint Layouts	2	28/03/2022			
7.	Grid and Table Layouts, Styles and Themes.	1	29/03/2022			
8.	**Event Handling:** Handling clicks or changes of various UI components	1	01/04/2022			
9.	**Fragments:** Creating fragments, Lifecycle of fragments	1	04/04/2022			
10.	Types of fragments	1	08/04/2022			
11.	Fragment states	1	09/04/2022			
12.	**Tutorial – 2**	1	09/04/2022			
No. of classes required to complete UNIT-II: 14				**No. of classes taken:**		

UNIT-III: INTENTS AND BROADCASTS

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.	**Intents** – Using intents to launch Activities, Explicitly starting new Activity	1	22/04/2022			
2.	Implicit Intents, Passing data to Intents, Getting results from Activities	2	23/04/2022			
3.	Using Intent to dial a number and to send an SMS	1	25/04/2022			
4.	**Broadcast Receivers** – Using Intent filters to service implicit Intents	1	26/04/2022			
5.	Resolving Intent filters	1	29/04/2022			
6.	Finding and using Intents received within an Activity	1	30/04/2022			
7.	**Notifications** – Creating Notifications	1	02/05/2022			
8.	Displaying notifications	1	06/05/2022			
9.	Displaying Toasts	1	07/05/2022			
10.	**Tutorial – 3**	1	09/05/2022			
No. of classes required to complete UNIT-III: 11				**No. of classes taken:**		

UNIT-IV: DATA STORAGE

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.	**Shared Preferences:** Creating shared preferences	1	10/05/2022			
2.	Saving and retrieving data using Shared Preference	1	02/05/2022			
3.	**Files:** Using application specific folders and files, creating files	1	13/05/2022			
4.	Reading data from files, Listing contents of a directory	2	16/05/2022			
5.	**Database:** Introduction to SQLite database, creating and opening a database	2	17/05/2022			
6.	Creating Tables, Inserting, Retrieving and Deleting Data	2	20/05/2022			
7.	**Content Providers** - Registering Content Providers	1	21/05/2022			
8.	Using content Providers (insert, delete, retrieve and update)	2	23/05/2022			
9.	**Tutorial – 4**	1	24/05/2022			
No. of classes required to complete UNIT-IV: 13				**No. of classes taken:**		

UNIT-V: ADVANCED TOPICS

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.	**Location Based Services** - Finding Current Location and showing location on the Map	1	27/05/2022			
2.	Updating Location, RSS Feeds	2	28/05/2022			
3.	Alarms, Using Camera	2	30/05/2022			
4.	Gestures, Integrating PHP/MySQL	2	31/05/2022			
5.	**Using Internet Resources** –	1	31/05/2022			

	Connecting to Internet Resource					
6.	Using Download Manager	1	31/05/2022			
7.	Publishing Android Application	2	03/06/2022			
8.	**Tutorial – 5**	1	04/06/2022			
No. of classes required to complete UNIT-V: 12				**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 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	Q=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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	The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate 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. B. Siva Rama Krishna**	**Mr. B. Siva Rama Krishna**	**Dr. Y. Vijay Bhaskar Reddy**	**Dr. D. Veeraiah**
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & 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.

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

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PROGRAM	**:** B.Tech., VI-Sem., CSE-B/S
ACADEMIC YEAR	**:** 2021-22
COURSE NAME & CODE	**: DATA MINING AND DATA WAREHOUSING-17CI16**
L-T-P STRUCTURE	**: 4**
COURSE CREDITS	**:** 3
COURSE INSTRUCTOR	**:** Mr. A.RAJA GOPAL
COURSE COORDINATOR	**:** Mr. G.V.SURESH

Prerequisite: Student should possess the knowledge of DBMS and basic mathematics.
Course Educational Objective (CEO): Students will be enabled to understand and implement classical models and algorithms in data warehousing and data mining. They will learn how to analyze the data, identify the problems, and choose the relevant models and algorithms to apply.

Course Outcomes (COs): After the completion of this course, student will be able to:
CO1: Outline the basic concepts of data warehouse & data mining.
CO2: Apply data pre-processing, generalization and data characterization techniques to provide suitable input for a range of data mining algorithms.
CO3: Analyze and provide solutions for real world problems using association mining techniques.
CO4: Understand and apply various classification algorithms
CO5: Examine various clustering algorithms and applications of data mining in real life

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	1	-	-	-	-	-	-	-	-	1	-	3	-
CO2	3	3	1	1	1	-	-	-	-	-	-	1	1	3	-
CO3	2	3	3	-	1	1	-	-	-	-	-	2	1	3	-
CO4	3	3	3	1	1	1	-	-	-	-	-	2	2	3	-
CO5	2	3	2	-	-	-	-	-	-	-	-	1	1	3	-

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

TEXT BOOK/S

1. Jiawei Han, Micheline Kamber ,Data Mining Concepts and Techniques, 2/e, 2006 , Elsevier Publisher (I to V Units).
2. GK Gupta , Introduction to Data Mining with Case Studies, 2/e, Prentice Hall of India Pvt Limited 2006 (V Unit-Web Mining)

REFERENCES

1. Pang-Ning tan, **Michael Steinbach, Vipinkumar** , Introduction to Data Mining, Addision-Wesley.
2. Margaret H. Dunham, **Data Mining Introductory and advanced topics**, Pearson Education
3. ArunK Pujari, **Data Mining Techniques**, University Press.
4. https://www-users.cs.umn.edu/~kumar001/dmbook/index.php
5. https://onlinecourses.nptel.ac.in/noc18_cs14/preview

PART-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT –I: Data Mining & Data Warehouse - Introduction

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.	Fundamentals of data mining,	1	21-02-2022		**TLM1**	
2.	Data Mining Functionalities	1	23-02-2022		**TLM1 /TLM2**	
3.	Classification of Data Mining systems,	1	25-02-2022		**TLM1 /TLM2**	
4.	Major issues in Data Mining	1	26-02-2022		**TLM1 /TLM2**	
5.	Data Warehouse and OLAP Technology for Data Mining	1	28-02-2022		**TLM1 /TLM2**	
6.	Multidimensional Data Model	1	02-03-2022		**TLM1 /TLM2**	
7.	Data Warehouse Architecture	1	04-03-2022		**TLM1 /TLM2**	
8.	Data Warehouse Implementation	1	05-03-2022		**TLM1 /TLM2**	
9.	Further Development of Data Cube Technology & From Data Warehousing to Data Mining	1	07-03-2022		**TLM1 /TLM2**	
10.	Tutorial	1	09-03-2022		**TLM3**	
No. of classes required to complete UNIT-I		10				

UNIT –II: Data Mining Primitives, Languages, And System Architectures

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.	Data Pre-processing: Needs Pre-processing, Data Cleaning,	1	11-03-2022		**TLM1 /TLM2**	
2.	Data Integration and Transformation	1	14-03-2022		**TLM1 /TLM2**	
3.	Data Reduction, Discretization and Concept Hierarchy Generation	1	16-03-2022		**TLM1 /TLM2**	
4.	Data Mining Primitives, Data Mining Query Languages,	1	19-03-2022		**TLM1 /TLM2**	
5.	Concepts Description	1	21-03-2022		**TLM1 /TLM2**	
6.	Characterization and Comparison: Data Generalization and Summarization based Characterization	1	23-03-2022		**TLM1 /TLM2**	
7.	Characterization and Comparison: Data Generalization and Summarization based Characterization	1	25-03-2022		**TLM1 /TLM2**	
8.	Analytical Characterization, Mining	1	26-03-2022		**TLM1 /TLM2**	
9.	Analytical Characterization, Mining	1	28-03-2022		**TLM1 /TLM2**	
10.	Class Comparisons: Discriminating between Different Classes	1	30-03-2022		**TLM1 /TLM2**	
11.	Class Comparisons: Discriminating between Different Classes	1	01-04-2022		**TLM1 /TLM2**	
12.	Mining Descriptive Statistical Measures in Large Databases.	1	04-04-2022		**TLM1 /TLM2**	
13.	Mining Descriptive Statistical Measures in Large Databases.	1	06-04-2022		**TLM1 /TLM2**	
14.	Mining Descriptive Statistical	1	08-04-2022		**TLM1 /TLM2**	

	Measures in Large Databases					
15.	Tutorial	1	09-04-2022		**TLM3**	
No. of classes required to complete **UNIT-II**		15				

UNIT –III: Association Rule Mining

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.	Association Rule Mining: Frequent patterns, Apriori algorithm	1	18-04-2022		**TLM1 /TLM2**	
2.	FP Growth algorithm	1	20-04-2022		**TLM1 /TLM2**	
3.	Mining Single-Dimensional Boolean Association Rules from Transactional Databases	1	22-04-2022		**TLM1 /TLM2**	
4.	Mining Single-Dimensional Boolean Association Rules from Transactional Databases	1	23-04-2022		**TLM1 /TLM2**	
5.	Mining Multilevel Association Rules from transaction Databases	1	25-04-2022		**TLM1 /TLM2**	
6.	Mining Multilevel Association Rules from Relational Databases	1	27-04-2022		**TLM1 /TLM2**	
7.	From Association Mining to Correlation Analysis	1	29-04-2022		**TLM1 /TLM2**	
8.	Constraint-Based Association Mining.	1	30-04-2022		**TLM1 /TLM2**	
9.	Tutorial	1	02-05-2022		**TLM3**	
No. of classes required to complete **UNIT-III**		09				

UNIT –IV: Classification and Prediction

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.	Classification and Prediction: Issues Regarding Classification and Prediction	1	04-05-2022		**TLM1 /TLM2**	
2.	Classification and Prediction	1	06-05-2022		**TLM1 /TLM2**	
3.	Classification by Decision Tree Induction	1	07-05-2022		**TLM1 /TLM2**	
4.	Bayesian Classification	1	09-05-2022		**TLM1 /TLM2**	
5.	Support Vector Machines	1	11-05-2022		**TLM1 /TLM2**	
6.	Classification Based on Concepts from Association Rule Mining	1	13-05-2022		**TLM1 /TLM2**	
7.	Rule based induction algorithm	1	16-05-2022		**TLM1 /TLM2**	
8.	Prediction, Classifier Accuracy	1	18-05-2022		**TLM1 /TLM2**	
9.	Tutorial	1	20-05-2022		**TLM3**	
No. of classes required to complete **UNIT-IV**		09				

UNIT-V: Cluster Analysis, Applications and Trends in Data Mining, Web data mining

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.	Cluster Analysis: Types of Data in Cluster Analysis,	1	21-05-2022		**TLM1 /TLM2**	
2.	A Categorization of Major Clustering Methods	1	23-05-2022		**TLM1 /TLM2**	
3.	Partitioning Methods, Density-Based Methods, Grid-Based Methods	1	25-05-2022		**TLM1 /TLM2**	
4.	Model-Based Clustering Methods, Outlier Analysis	1	27-05-2022		**TLM1 /TLM2**	
5.	Applications and Trends in Data Mining: Overview of Data Mining Applications	1	28-05-2022		**TLM1 /TLM2**	
6.	Web data mining: Introduction	1	30-05-2022		**TLM1 /TLM2**	
7.	Web terminology and	1	01-06-2022		**TLM1**	

	characteristics				**/TLM2**	
8.	Web content mining, Web usage mining, web structure mining	1	03-06-2022		**TLM1 /TLM2**	
9.	Tutorial	1	04-06-2022		**TLM3**	
No. of classes required to complete **UNIT-V**		09				

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 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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	The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate an ability to analyze, design and implement database applications.

Course Instructor	Course Coordinator	Module Coordinator	HOD
A.RAJA GOPAL	**G.V.SURESH**	**DR.Y.V.BHASKAR REDDY**	**DR. D.VEERAIAH**

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & 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.

hodcse@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 : **Mr. K.SASI BHUSHAN**
Course Name & Code : **MICROPROCESSORS AND MICROCONTROLLERS [17EC22]**
L-T-P Structure : 3-0-0 Credits : 3
Program/Sem/Sec : B.Tech., CSE., VI-Sem., Sections - B A.Y : 2021-22

Pre-requisites: Digital Circuits, Computer organization

Course Educational Objectives: In this course student will learn about the Architecture of 8086 Microprocessor and 8051 Microcontroller and their Assembly Language Programming, interfacing Memory and Various Peripherals with 8086 Microprocessor/8051 Microcontroller and concepts of Interrupts and Serial Communication in reference to 8086

COURSE OUTCOMES (COs): At the end of the course, students are able to

- **CO 1** : **Understand** the architecture and operation of 8086 µprocessor & 8051µcontroller
- **CO 2** : **Apply** the instructions of 8086/8051 for various applications.
- **CO 3** : **Analyze** the operation of peripherals and devices for interfacing applications.
- **CO4** : **Design** a 8086/8051 based system by interfacing memory, peripherals and I/O devices

COURSE ARTICULATION MATRIX:

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
CO 1	1	-	-	-	-	-	-	-	-	-	-	1	-	1	-
CO 2	3	3	1	-		-	-	-	-	-	-	2	-	2	-
CO 3	2	3	2	-	-	-	-	-	-	-	-	3	-	3	-
CO 4	3	3	3	-		-	-	-	-	-	-	3	-	3	-

Note: 1- Slight (Low), **2 –** Moderate (Medium), **3 -** Substantial (High), no correlation **'-'**

BOS APPROVED TEXT BOOKS:

T1 Douglas V. Hall, "Micro Processors & Interfacing", TMH, 2007.

T2 A. K. Ray and K.M. Bhurchandi, Advanced Microprocessor And Peripherals,2nd Edition TMH Publishers.

T3 Muhammad Ali Mazidi, Janice GillispieMazidi, Rolin D. Mckinlay "Microcontrollers and Embedded System", Pearson Education Publishers, 2nd Edition

BOS APPROVED REFERENCE BOOKS:

R1 Raj Kamal, Microcontrollers Architecture, Programming, Interfacing and System Design, Pearson Education Publishers.

R2 J. K. Uffenbeck, "The 8088 and 8086 Micro Processors", PHI, 4th Edition, 2003.

R3 Ajay Deshmukh, "Micro Controllers-Theory and Applications", Tata McGraw Hill Publishers.

R4 Kenneth J. Ayala, "The 8051 Micro Controller", Cengage Learning Publishers, 3rd Edition, 2000.

Prescribed Syllabus:

17EC22 - MICROPROCESSORS AND MICROCONTROLLERS

UNIT – I

Microprocessor Architecture: Introduction to Microprocessors-Purpose of a Microprocessor, different types of Microprocessors, their features and their comparison; 8086 Microprocessor-Architecture , Special functions of General purpose registers, 8086 flag register and function of 8086 Flags, Addressing modes of 8086.

Instruction Set: Instruction set of 8086, Assembly language programs involving logical, Branch and Call instructions, Sorting, Evaluation of Arithmetic Expressions, String manipulation, Assembler directives, simple programs, procedures and macros.

UNIT – II

8086 Memory and I/O Interfacing: Pin diagram of 8086, Minimum mode and maximum mode of operation, Timing diagram, Memory (Static RAM & EPROM) and I/O interfacing to 8086. Interrupt structure of 8086, Interrupt Vector table, Interrupt service routines.

UNIT – III

Peripherals and Devices: DMA Controller 8237, Interrupt Controller 8259 and Cascading, USART 8251 8255 PPI – various modes of operation, Keyboard, D/A and A/D converter interfacing.

UNIT – IV

Microcontroller: 8051 Microcontroller Architecture, Pin Diagram, Addressing modes, Instruction Set and Programs, 8051 Memory and I/O interfacing .

UNIT – V

8051 Interfacing: Modes of timer operation, Serial port operation, Interrupt structure of 8051, Interfacing of Seven segment Displays, Stepper Motor and Serial/Parallel Printer

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I : Microprocessor Architecture & Instruction Set

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.	Discussion of Syllabus, Course Outcomes and Introduction to µprocessors	1	21-02-2022			
2.	Types of µprocessors, features & comparison, µprocessor-Architecture	1	22-02-2022			
3.	General purpose registers , their special functions, Flag register and function of flags	1	24-02-2022			
4.	Addressing modes of 8086	1	28-02-2022			
5.	Instruction set of 8086	1	01-03-2022			
6.	Assembler directives, Procedures and macros	1	03-03-2022			
7.	Assembly language programs involving logical, Branch and Call instructions.	1	07-03-2022			
8.	Assembly language programs for Sorting and Arithmetic Expressions	1	08-03-2022			
9.	String manipulation Instructions	1	10-03-2022			
10.	**Tutorial,/Assignment**	1	14-03-2022			

UNIT-II : 8086 Memory and I/O Interfacing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
11.	Pin diagram of 8086	1	15-03-2022			
12.	Minimum mode of operation	1	17-03-2022			
13.	Maximum mode of operation	1	21-03-2022			
14.	Timing diagrams	1	22-03-2022			
15.	Memory interfacing to 8086	1	24-03-2022			
16.	Static RAM , EPROM and I/O interfacing to 8086	1	28-03-2022			
17.	Interrupt structure of 8086	1	29-03-2022			
18.	Interrupt service routines	1	31-03-2022			
19.	Interrupt Vector table	1	04-04-2022			
20.	**Tutorial,/Assignment**	1	05-04-2022			
21.	**Revision for I-Mid Examination**	1	07-04-2022			

UNIT-III : Peripherals and Devices

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
22.	DMA Controller 8237	1	18-04-2022			
23.	Interrupt Controller 8259	1	19-04-2022			
24.	Cascading of 8259	1	21-04-2022			
25.	USART 8251	1	25-04-2022			
26.	8255 PPI Modes of operation	1	26-04-2022			
27.	Keyboard interfacing	1	28-04-2022			
28.	Digital to Analog Converter interfacing	1	02-05-2022			
29.	Analog to Digital Converter interfacing	1	03-05-2022			
30.	**Tutorial,/Assignment**	1	05-05-2022			

UNIT-IV : Microcontroller

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.	8051 µcontroller Architecture	1	09-05-2022			
32.	8051Pin Diagram	1	10-05-2022			
33.	Addressing modes of µcontroller	1	12-05-2022			
34.	8051 Instruction Set	1	16-05-2022			
35.	8051 Programs	1	17-05-2022			
36.	8051 Memory interfacing & I/O interfacing	1	19-05-2022			
37.	**Tutorial,/Assignment**	1	23-05-2022			

UNIT-V : 8051 Interfacing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
38.	Modes of timer operation	1	24-05-2022			
39.	Serial port operation	1	26-05-2022			
40.	Interrupt structure of 8051	1	30-05-2022			
41.	Interfacing of Seven segment Displays, Stepper Motor and Serial/Parallel Printer interfacing	1	31-05-2022			
42.	**Tutorial,/Assignment**	1	02-06-2022			

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

Academic Calendar: 2019 – 20 (IV Semester)

B.Tech VI Semester - 2017 Admitted Batch			
Class work Commence From	**21-02-2022**		
Description	**From**	**To**	**Weeks**
I Phase of Instructions	**21-02-2022**	09-04-2022	7 Weeks
I Mid Examinations	11-04-2022	16-04-2022	1 Week
II Phase Instructions	18-04-2022	**04-06-2022**	7 Weeks
II Mid Examinations	06-06-2022	11-06-2022	1 Week
Preparation & Practicals	13-06-2022	18-06-2022	1 Week
Semester End Examinations	20-06-2022	02-07-2022	2 Weeks

EVALUATION PROCESS:

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
Total Marks = CIE + SEE	**100**

CO 1	**Understand** the architecture and operation of 8086 µprocessor & 8051µcontroller	Describe, Explain, Paraphrase, Restate ,Associate, Contrast, Summarize, Differentiate, Interpret, Discuss
CO 2	**Apply** the instructions of 8086/8051 for various applications.	Calculate, Predict, Apply, Solve, Illustrate, Use, Demonstrate, Determine, Model, Experiment, Show, Examine, Modify
CO 3	Analyze the operation and interfacing of peripherals like memory and I/O devices to 8086/8051 for different applications.	Classify, Outline, Break down, Categorize, Analyze, Diagram, Illustrate, Infer, Select
CO 4	**Design** a 8086/8051 based system by interfacing memory, peripherals and I/O devices	Categorize, Analyze, Illustrate, Infer Select

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

Course Instructor	Course Coordinator	Module Coordinator	HOD
[Mr. K.SASI BHUSHAN]	[Mr. K.SASI BHUSHAN]	[Dr. P. LACHI REDDY]	[Dr.Y. AMAR BABU]

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)
Accredited by NAAC & NBA (Under Tier - I) and 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://www.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PROGRAM : B.Tech. VI-Sem. (B)

ACADEMIC YEAR : 2021-22

COURSE NAME & CODE : **Data Communications & Computer Networks –17CI17**

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **Dr.K Naga Prasanthi**

COURSE COORDINATOR : **Dr.K Naga Prasanthi**

PRE-REQUISITE: Basic Computer Fundamentals and Concepts

COURSE OBJECTIVE: The students will be able to Build an understanding ofthe fundamental concepts of computer networking and gain expertise in some specific areas of networking such as the design and maintenance of individual networks.

COURSE OUTCOMES (CO): After the completion of this course, student will be able to:
CO1: Understand how the data is transmitted from point-to-point.
CO2: Summarize Data Link Layer Protocols.
CO3: Analyze different Medium Access Control protocols.
CO4: Evaluate different routing protocols and Transport layer protocols.
CO5: Understand the concepts of Presentation and Application Layer Protocols

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**	**2**	**2**											**1**	
CO2	**1**	**2**	**2**									**1**		**1**	
CO3	**1**	**3**	**3**									**1**		**1**	
CO4	**2**	**3**	**3**	**1**								**1**	**1**		
CO5	**2**	**2**	**2**									**1**	**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).

TEXT BOOKS:

T1 1 S. Tanenbaum —Computer Network: Second Ed. Prentice Hall, India.

2 B. A. Frouzan, Data Communication, Tata Mc Graw Hill.

REFERENCE BOOKS:

R1 D. Berekas an R. Gallager, ―Data Networks:, second Ed. Prentice Hall, India.

R2 D. E. Coner, ―Intertworking with TCP/IP‖, Vol-I.Prentice Hall India.

R3 G. E. Keiser, ―Local Area Network‖, Mc Graw Hill, International Ed.

R4 W. Stalling, ―Data & Computer Communications‖, Maxwell Macmillan Internation Ed.

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	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to computer networks	1	22-2-22		TLM2	CO1	T1,T2	
2.	Review of ISO-OSI Model	1	24-2-22		TLM2	CO1	T1	
3.	Introduction to TCP/IP Model	1	26-2-22		TLM2	CO1	T1	
4.	Pulse Code Modulation (PCM) Differential Pulse Code Modulation (DPCM)	2	3-3-22 5-3-22		TLM2	CO1	T1,T2	
5.	Delta Modulation (DM)	1	8-3-22		TLM2	CO1	T1,T2	
6.	Multiplexing Techniques; FrequencyDivision, Time Division	1	10-3-22		TLM2	CO1	T1,R1	
7.	Transmission Media: Wires, Cables,Fibre Optic.	1	12-3-22		TLM2	CO1	T1,T2	
8.	Error Detection and Correction: Single and parity Check	1	15-3-22		TLM2	CO1	T1,T2	
9.	Cyclic Redundancy Code & Hamming Code.	1	17-3-22		TLM2	CO1	T1	
No. of classes required to complete UNIT-I		10			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.	**DATA LINK LAYER PROTOCOLS**	1	19-3-22		TLM2	CO2	T1,R1	
11.	**Stop and Wait Protocols:** Noise free channels	1	22-3-22		TLM2	CO2	T1,R1	
12.	Noisy channels, performance and efficiency	1	24-3-22		TLM2	CO2	T1,R2	
13.	**Sliding WindowProtocols:** Go Back	2	26-3-22 29-3-22		TLM2	CO2	T1,R3	
14.	Selective Repeat ARQ	1	31-3-22		TLM2	CO2	T1,R2	
15.	performance	1	5-4-22		TLM2	CO2	T1,R2	
16.	efficiency verification of protocol	1	7-4-22		TLM2	CO2	T1,R3	
17.	HDLC data link protocol	1	9-4-22		TLM2	CO2	T1,R3	
No. of classes required to complete UNIT-II		9			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.	**MEDIUM ACCESS CONTROL SUB LAYER**-Concept of Random Access	1	19-4-22		TLM2	CO3	T1,R3	
19.	Pure ALOHA, throughput characteristics of ALOHA, S-ALOHA	1	21-4-22		TLM2	CO3	T1	
20.	LAN: IEEE 802.3, 802.4 and 802.5 Protocols, performance of Ethernet.	1	23-4-22		TLM2	CO3	T1	
21.	Token Ring Protocol, FDDI Protocol, General Principles	1	26-4-22		TLM2	CO3	T1	
22.	Virtual circuits and datagram‘s, Windows flow	1	28-4-22		TLM2	CO3	T1,R2	

	control							
23.	Packet Discarding, Traffic Shaping	1	30-4-22		TLM2	CO3	T1	
24.	Choke RSVP, Internetworking using Bridge, Routers and Gateways	1	5-5-22		TLM2	CO3	T1	
No. of classes required to complete UNIT-III		7			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.	**Routing Algorithms:** Optimality principle, shortest path routing - Dijkstra, Flooding and broadcasting	1	7-5-22		TLM2	CO4	T1,R1	
26.	distance vector routing, link state routing	1	10-5-22		TLM2	CO4	T1	
27.	flow based routing, Multicasting routing flow and congestion control, Internet Architecture and Addressing	1	12-5-22		TLM2	CO4	T1	
28.	**Transport Layer:** Design issues, Quality of Services	1	14-5-22		TLM2	CO4	T1	
29.	Primitives Connection Management: Addressing, Connection Establishment and Releases	1	17-5-22		TLM2	CO4	T1	
30.	Flow control and Buffering, Crash recovery	1	19-5-22		TLM2	CO4	T1	
31.	Element of TCP/IP protocol: User Data gram Protocol (UDP)	1	21-5-22		TLM2	CO4	T1	
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
32.	**Distributed Applications**	1	24-5-22		TLM2	CO5	T1,T2	
33.	Electronic Mail	1	26-5-22		TLM2	CO5	T1,T2	
34.	SMTP and HTTP.	1	28-5-22		TLM2	CO5	T1,T2	

35.	**Overview Cryptography**: Substitutions and Transposition Ciphers	1	31-5-22		TLM2	CO5	T1,T2	
36.	Data Encryption Standard (DES)	1	2-6-22		TLM2	CO5	T1,T2	
37.	RSA algorithm	1	4-6-22		TLM2	CO5	T1, T2	
No. of classes required to complete UNIT-V		6			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

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	1,2,3,4,5	A=5
Evaluation of Quiz Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=10
Evaluation of Mid Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4,5	C=20
Attendance	-	D=5
Cumulative Internal Examination : A+B+C+D	**1,2,3,4,5**	**A+B+C+D=40**
Semester End Examinations	**1,2,3,4,5**	**E=60**
Total Marks: A+B+C+D+E	**1,2,3,4,5**	**100**

PROGRAM 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.

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.

PROGRAM SPECIFIC OUTCOMES

1. PSO1:

The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.

2. PSO2:

The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.

3. PSO3:

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

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Dr.K Naga Prasanthi	Dr.K Naga Prasanthi	Dr.D.V.Subbaiah	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 : Dr. Y.Vijay Bhaskar Reddy
Course Name & Code : PHP Programming - 17CS08
L-T-P Structure : 3-0-0 Credits : 3
Program/Sem/Sec : B.Tech., CSE., VI-Sem., B Sec. A.Y : 2021-22

PRE-REQUISITE: Students should have the knowledge of OOP language, web technologies.

COURSE EDUCATIONAL OBJECTIVES (CEOs): The main objective of the course is that the students will gain the knowledge necessary to design and develop dynamic, database-driven Web applications using PHP.

COURSE OUTCOMES (COs): At the end of the course, students are able to

CO 1	Identify the basic programming constructs of PHP.
CO 2	Develop programs using functions, strings and arrays.
CO 3	Apply object-oriented principles in PHP.
CO 4	Design interactive web pages by using jQuery & AJAX.
CO 5	Design data driven applications by using PHP.

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	1	2	-	2	-	-	-	-	-	-	-	3	-	-
CO2	3	1	3	-	2	-	-	-	-	-	-	-	3	-	-
CO3	2	1	3	-	2	-	-	-	-	-	-	-	3	-	-
CO4	2	1	3	-	2	-	-	-	-	-	-	-	3	2	-
CO5	2	1	3	-	2	-	-	-	-	-	-	-	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).

TEXTBOOKS:

T1 Steven Holzner, - "PHP: The Complete Reference", McGraw-Hill Education, 2007.

T2 Kevin Tatroe, Peter MacIntyre, Rasmus Lerdorf,- "Programming in PHP", O'Reilly, 3rd Edition, 2013.

REFERENCE BOOKS:

R1 HTML 5 Black Book, Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and jQuery DT Editorial Services Dreamtech Publications.

R2 Lynn Beighley, Michael Morrison, - "Head First PHP & MySQL: A Brain-Friendly Guide", O'Reilly, 1st Edition.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: INTRODUCTION TO PHP

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 Course and COs	1	21/02/22		**TLM2 TLM5**	
2.	Introduction to PHP	1	23/02/22		**TLM2 TLM5**	
3.	Evaluation of PHP	1	26/02/22		**TLM2 TLM5**	
4.	Defining variable and constants, PHP Data types	1	28/02/22		**TLM2 TLM5**	
5.	Operators and Expressions.	1	02/03/22		**TLM2 TLM5**	
6.	Making Decisions, Assignment I	1	05/03/22		**TLM2 TLM5,6**	
7.	doing Repetitive task with looping	1	07/03/22		**TLM2 TLM5**	
8.	Mixing decisions and looping with HTML	1	09/03/22		**TLM2 TLM5**	
No. of classes required to complete UNIT-I: 08				No. of classes taken:		

UNIT-II: FUNCTIONS, STRING & ARRAY

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
9.	Function, Define a function,	1	12/03/22		**TLM2 TLM5**	
10.	Call by value & Call by reference	1	14/03/22		**TLM2 TLM5**	
11.	Recursive functions	1	16/03/22		**TLM2 TLM5**	
12.	Creating and accessing String, Searching & Replacing String	1	19/03/22		**TLM2 TLM5**	
13.	Formatting String, String Related Library functions	1	21/03/22		**TLM2 TLM5**	
14.	Anatomy of an Array, Assignment II	1	23/03/22		**TLM2 TLM5,6**	

15.	Creating Index based and Associative array & Looping	1	27/03/2022		**TLM2 TLM5**	
16.	Some useful library functions.	1	28/03/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-II: 08				No. of classes taken:		

UNIT-III: ADVANCE PHP

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
17.	Objects, Declaring a class, new keyword, constructor and Destructor	1	30/03/2022		**TLM2 TLM5**	
18.	Access method and properties using $this variable, Public, private, protected properties and methods	1	02/04/2022		**TLM2 TLM5**	
19.	Class constant, Inheritance	1	04/04/2022		**TLM2 TLM5**	
20.	Polymorphism, Parent :: & self:: keyword, Instance of operator	1	06/04/2022		**TLM2 TLM5**	
21.	Abstract method and class	1	09/04/2022		**TLM2 TLM5**	
22.	Interface, Final. Assignment III	1	18/04/2022		**TLM2 TLM5,6**	
23.	Understanding Exceptions	1	20/04/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-III: 07				No. of classes taken:		

UNIT-IV: PHP WITH SCRIPT

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
24.	Introduction to JQuery	1	23/04/2022		**TLM2 TLM5**	
25.	Validation using JQuery	1	25/04/2022		**TLM2 TLM5**	
26.	JQuery Forms	1	27/04/2022		**TLM2 TLM5**	
27.	JQuery Examples	1	30/04/2022		**TLM2 TLM5**	
28.	Introduction to AJAX	1	02/05/2022		**TLM2 TLM5**	
29.	PHP with AJAX, Assignment IV	1	04/05/2022		**TLM2 TLM5,6**	
30.	Working with database.	1	07/05/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-IV: 07				No. of classes taken:		

UNIT-V: PHP WEB SERVICES

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.	Capturing Form Data	1	09/05/2022		**TLM2 TLM5**	
32.	Dealing with Multi-value file	1	11/05/2022		**TLM2 TLM5**	

33.	generating File uploaded form, redirecting a form after submission	1	14/05/2022		**TLM2 TLM5**	
34.	Sessions, Forms GET and POST data	2	16/05/2022		**TLM2 TLM5**	
35.	Cookies, HTTP Headers	1	21/05/2022		**TLM2 TLM5**	
36.	Introduction to RDBMS	1	23/05/2022		**TLM2 TLM5**	
37.	Connection with MySQL Database	2	25/05/2022		**TLM2 TLM5**	
38.	Performing basic database operations (DML), Assignment V	2	30/05/2022		**TLM2 TLM5,6**	
39.	Setting query parameter, Executing query	2	04/06/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-V: 13				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

PART-C

EVALUATION PROCESS (R17 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	Q=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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 teamwork**: 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	The ability to apply Software Engineering practices and strategies in software project development using open-source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate an ability to analyze, design and implement database applications.

Course Instructor	Course Coordinator	Module Coordinator	HOD
(Dr.Y.V.B.Reddy)	(Dr.Y.V.B.Reddy)	(Dr.Y.V.B.Reddy)	(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.

hodcse@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 : Mr.N.Srikanth

Course Name & Code : Software Testing Methodologies- 17CS91

L-T-P Structure : 3-0-0 Credits : 3

Program/Sem/Sec : B.Tech., CSE., VI-Sem., Sections- B A.Y : 2021-22

PRE-REQUISITE **:** Software Engineering and UML

COURSE EDUCATIONAL OBJECTIVES (CEOs): The primary objective of this course is to know the importance of automation testing compared with manual testing and importance of testing in real life while developing any product/project which reduces the risk of a developer. To know how to prepare testing techniques by using flow graph, transition flows and reduction of path expressions. To study fundamental concepts in software testing including software testing objectives, process, criteria, strategies, and methods.

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

CO1: Interpret a model for testing and understand the process of testing

CO2: Visualize control flow graph and demonstrate complete path testing to achieve C1+C2 and identify the complications in a transaction flow testing and anomalies in data flow testing.

CO3: Apply domain testing strategies for different domains..

CO4: Apply reduction procedures to control flow graph and simplify it into a single path expression and understand the use of decision tables in test case design.

CO5: Identify effective approach for node reduction.

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	-	-	-	-	-	-	-	-	-	-	-	-	3
CO2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	3
CO3	3	2	1	-	-	-	-	-	-	-	-	-	-	-	3
CO4	2	3	1	-	-	-	-	-	-	-	-	-	-	-	3
CO5	2	3	1	-	-	-	-	-	-	-	-	-	-	-	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).

TEXT BOOKS:

T1 A Boris Biezer; "Software Testing Techniques"; International Thomson computer Press, Second edition

REFERENCE BOOKS:

R1 Brain Marick; "The Craft of Software Testing"; Prentice Hall Series in innovative technology.

R2 Renu Rajani Pradeep Oak, "Software Testing, Effective methods, Tools and Techniques", TMHI.

R3 Dr.K.V.K.K.Prasad, "Software Testing Tools", Dreamtech

R4 "Software Testing in the Real World ", Edward Kit, Pearson.

R5 Perry, John Wiley, "Effective methods of Software Testing".

R6 https://www.youtube.com/watch?v=gPE9emPFrwo

R7 https://freevideolectures.com › Computer Science › IIT Bombay

R8 NPTEL videos : https://nptel.ac.in/courses/106105150

PART – B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I : Purpose of Testing, Taxonomy of bugs.

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 & Course Outcomes	1	21-02-2022		**TLM1**	
2.	Introduction to UNIT-I	1	25-02-2022		**TLM1**	
3.	Purpose of Testing	1	26-02-2022		**TLM1**	
4.	Dichotomies	1	28-02-2022		**TLM1/ TLM2**	
5.	model for testing	1	04-03-2022		**TLM1/ TLM2**	
6.	consequences of bugs	1	05-03-2022		**TLM1/ TLM2**	
7.	Taxonomy of bugs	1	07-03-2022		**TLM1/ TLM2**	
8.	Assignment -1	1	11-03-2022		**TLM3**	
No. of classes required to complete UNIT-I: 8				No. of classes taken:		

UNIT-II : Flow Graphs and Path testing, Transaction flow and Data flow testing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
9.	Introduction to UNIT-II	1	12-03-2022		**TLM1**	
10.	Basics concepts of path testing	1	14-03-2022		**TLM1**	
11.	predicates, path predicates and achievable paths	1	19-03-2022		**TLM1/ TLM2**	
12.	path sensitizing	1	21-03-2022		**TLM1**	
13.	path instrumentation, application of path testing	1	25-03-2022		**TLM1/ TLM2**	
14.	Transaction flow testing techniques	1	26-03-2022		**TLM1/ TLM2**	
15.	Basics of Data flow testing	1	28-03-2022		**TLM1/ TLM2**	
16.	strategies in dataflow testing	1	01-04-2022		**TLM1/ TLM2**	
17.	Application of dataflow testing	1	04-04-2022		**TLM1/ TLM2**	
18.	Assignment -2	1	08-04-2022		**TLM3**	
No. of classes required to complete UNIT-II: 10				No. of classes taken:		
I MID EXAMINATIONS FROM 11-04-2022 TO 16-04-2022						

UNIT-III : Domain Testing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
19.	Introduction to UNIT-III	1	18-04-2022		**TLM1**	
20.	Domains and paths	1	22-04-2022		**TLM1/ TLM2**	
21.	Nice & ugly domains	1	23-04-2022		**TLM1/ TLM2**	
22.	domain testing	1	25-04-2022		**TLM1/ TLM4**	
23.	domains and interfaces testing	1	29-04-2022		**TLM1/ TLM2**	
24.	domains and testability	1	30-04-2022		**TLM1/ TLM2**	
25.	Assignment -3	1	02-05-2022		**TLM3**	
No. of classes required to complete UNIT-III: 7				No. of classes taken:		

UNIT-IV : Paths, path products and Regular expressions, Logic Based Testing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
26.	Introduction to UNIT-IV	1	06-05-2022		**TLM1**	
27.	Path products & expression	1	07-05-2022		**TLM1/ TLM2**	
28.	Reduction Procedure	1	09-05-2022		**TLM1/ TLM2**	
29.	Applications	1	13-05-2022		**TLM1/ TLM2**	
30.	regular expressions & flow anomaly detection	1	14-05-2022		**TLM1/ TLM2**	
31.	Logic based testing Overview	1	16-05-2022		**TLM1/ TLM2**	
32.	decision tables, path expressions	1	20-05-2022		**TLM1/ TLM5**	
33.	kv charts, specifications	1	21-05-2022		**TLM1/ TLM2**	
34.	Assignment -4	1	23-05-2022		**TLM3**	
No. of classes required to complete UNIT-IV: 10				No. of classes taken:		

UNIT-V : State, state graphs and Transition Testing, Graph matrices and Application

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
35.	Introduction to UNIT-V	1	27-05-2022		**TLM1**	
36.	State graphs	1	27-05-2022		**TLM1/ TLM2**	
37.	Good & Bad state graphs	1	28-05-2022		**TLM1/ TLM2**	
38.	State testing, Testability tips	1	30-05-2022		**TLM1/ TLM2**	
39.	Matrix of graph, Relations, power of a matrix	1	01-05-2022		**TLM1**	
40.	Node reduction algorithm Building Tools	1	03-05-2022		**TLM1/ TLM2**	
41.	Building tools	1	04-05-2022		**TLM1/ TLM2**	
42.	Assignment -4	1	04-05-2022		**TLM3**	
No. of classes required to complete UNIT-V: 7				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 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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	The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate an ability to analyze, design and implement database applications.

Course Instructor	Course Coordinator	Module Coordinator	HOD
(N.Srikanth)	(N.Srikanth)	(Dr.Ch.V.Narayana)	(Dr. D. Veeraiah)

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution

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

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

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

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : U. RAMBABU
Course Name & Code : Industrial Engineering and management
L-T-P Structure : 3-0-0 Credits : 3
Program/Sem/Sec : B.Tech., CSE., VI-Sem., Sections- B A.Y : 2021-22

PRE-REQUISITE:

Course Objectives: NIL

1. To make students understand management, its principles, contribution to management, organization, and its basic issues and types.
2. To make students understand the concept of plant location and its factors and plant layout and types, method of production and work study importance.
3. To understand the purpose and function of statistical quality control and material management techniques
4. To make students understand the concept of HRM and its functions.
5. To make students understand PERT & CPM methods in effective project management and need of project crashing and its consequence on cost of project.

Course Outcomes:

Upon the Successful Completion of This Course Students Will be Able To:

1. Apply management principles to the particle situations to be able to know which type of business organisation structure suits.
2. Determine decision making relating to the problems in operations and production activities.
3. Apply SQC techniques and to take effective decision making relating to reduce the investment in materials through better control of inventory.
4. Ability to manage people in working environment with the practices of HRM across corporate businesses.
5. Identify the PERT & CPM techniques in effective project management.

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

COs	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO 12	PSO 1	PSO 2	PSO 3
CO1	1						2	2	2	1		1			
CO2					2							1			
CO3		2					2				2	1			
CO4								2	2	2		1			
CO5					2		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).

Textbooks:

T1: Dr. A.R. Aryasri, Management Science, TMH, 10th edition, 2012

References:

R1: Koontz & weihrich – Essentials of management, TMH, 10th edition, 2015

R2: Stoner, Freeman, Gilbert, Management, 6th edition Pearson education, New Delhi, 2004

R3:O. P. Khanna, Industrial engineering and Management

R4: L.S. Srinath, PERT & CPM

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: introduction to Management

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 & Course Outcomes	1	21-02-2022		TLM1	
2.	Management Introduction and Definition	1	23-02-2022		TLM1	
3.	Nature Importance of management and Functions	1	24-02-2022		TLM2	
4.	Taylor's scientific management theory	1	28-02-2022		TLM2	
5.	Fayal's principles of management	1	02-03-2022		TLM2	
6.	Contribution of Elton mayo & MASLOW theory	1	03-03-2022		TLM2	
7.	Herzberg theory of motivation & Douglas MC Gregor theory of motivation	1	07-03-2022		TLM2	
8.	Organization Basic concept: Authority & responsibility & Delegation of Authority	1	09-03-2022		TLM2	
9.	Span of control & Departmentation and Decentralization	1	10-03-2022		TLM2	
10.	Organization structure: line organization structure, Line, and staff organization &	1	14-03-2022		TLM2	
11.	Functional organization, Committee & Matrix organization	1	16-03-2022		TLM2	
No. of classes required to complete UNIT-I:11				No. of classes taken:		

UNIT-II: Operations Management

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.	Plant location and Factors influencing location	1	17-03-2022		TLM2	
2.	Objectives and Principles of plant layout	1	21-03-2022		TLM2	
3.	types of plant layouts	1	24-03-2022		TLM2	
4.	Methods of production: job batch and mass production	1	28-03-2022		TLM2	
5.	Work study: Basic procedure involved in method study work measurement	1	30-04-2022		TLM2	
6.	Basic procedure involved in method study work measurement	1	31-04-2022		TLM2	
7.	Time study problems	1	04-04-2022		TLM2	
No. of classes required to complete UNIT-II:07				No. of classes taken:		

UNIT-III: Statistical quality control & Materials Management

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.	Statistical quality control Meaning	1	06-04-2022		TLM2	
2.	Variables and attributes & X chart problems and R	1	07-04-2022		TLM2	
3.	I MID EXAM		11-04-2022			
4.	I MID EXAM		13-04-2022			
5.	I MID EXAM		14-04-2022			
6.	C Chart problems AND P Chart problems	1	18-04-2022		TLM2	
7.	Acceptance sampling & Sampling plans & Deming's contribution to quality	1	20-04-2022		TLM1	
8.	Materials management: Objectives of Materials management,	1	21-04-2022		TLM2	
9.	Need for inventory control		25-04-2022			
10.	Purchase procedure, Store records	1	27-04-2022		TLM1	
11.	Methods of inventory control: ABC analysis & EOQ analysis EOQ Problems	1	28-04-2022		TLM2	
12.	Stock levels & Problems on stock levels	1	02-05-2022		TLM2	
No. of classes required to complete UNIT-III:09				No. of classes taken:		

UNIT-IV: Human Resource management (HRM)

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.	Concepts of HRM: Basic functions of HR manager	1	04-05-2022		TLM2	
2.	Manpower planning	1	05-05-2022		TLM2	
3.	Recruitment & Selection & Training and development	1	09-05-2022		TLM2	
4.	Placement, Wage, and salary administration	1	11-05-2022		TLM2	
5.	Promotion, Transfer & Separation &	1	12-05-2022		TLM2	
6.	Performance Appraisal	1	16-05-2022		TLM2	
7.	Job evaluation & Merit rating	1	18-05-2022		TLM2	
No. of classes required to complete UNIT-IV:07				No. of classes taken:		

UNIT-V: Project management

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.	**Project management: Introduction** Early techniques in project management	1	19-05-2022		TLM2	
2.	Network analysis & Rules for drawing of networks and Critical path method	1	23-05-2022		TLM2	
3.	Problems on CPM & Identifying critical path	1	25-05-2022		TLM1	
4.	Problems on CPM & Identifying critical path	1	26-05-2022		TLM1	
5.	Programme evaluation and review technique (PERT)	1	30-05-2022		TLM1	
6.	Project cost analysis, project crashing	1	01-06-2022		TLM1	
7.	Content beyond the syllabus (online trading)	1	02-06-2022		TLM2	
8.	II MID EXAM		06-06-2022			
9.	II MID EXAM		07-06-2022			
10.	II MID EXAM		11-06-2022			
No. of classes required to complete UNIT-V:07				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 Regulations):

Evaluation Task	Marks
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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	The ability to apply Software Engineering practices and strategies in software project development using open-source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate an ability to analyze, design and implement database applications.

Course Instructor	Course Coordinator	Module Coordinator	HOD
(U.RAMBABU)	(U.RAMBABU)	(U.RAMBABU)	(Dr.A. Adisesha Reddy)

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.

hodcse@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 : **ANDROID TECHNOLOGIES LAB & 17CS63**
L-T-P Structure : 0-0-2 **Credits:** 1
Program/Sem/Sec : B.Tech.–CSE/VI Sem/Sec-B **A.Y.** : 2021-22

1. **Prerequisite:** Knowledge in JAVA Programming

2. **Course Educational Objective (CEO):**

This course facilitates students develop competence and confidence in android programming and understand the entire Android Apps Development Cycle, as well as it would also enable the students to independently create new Android Applications.

3. **Course Outcomes (COs):** At the end of the course, the student will be ableto:

CO1: Design basic Android Applications.

CO2: Develop applications that interact with SQLite Database.

CO3: Design applications that make use of Advanced Android Concepts.

CO4: Improve individual / team work skills, communication & report writingskills with ethical values.

4. **Course Articulation Matrix:**

Course Code	CO	PO												PSO		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
17CS63	CO1	1	2	3	1	3	-	-	-	-	-	-	2	3	-	-
	CO2	2	2	3	1	3	-	-	-	-	-	-	2	3	3	-
	CO3	1	2	3	1	3	-	-	-	-	-	-	2	3	-	-
	CO4	-	-	-	-	-	-	-	2	2	2	-	2	-	-	-
1 = Slight (Low) 2 = Moderate (Medium) 3 = Substantial (High)																

5. Schedule:

S. No.	Programs to be Covered	No.of Classes		Date	DM
		As per the Schedule	Taken		
1.	Introduction to Android Platform	2		23/2/2022	5
2.	Cycle - 1, 2	2		2/3/2022	5
3.	Cycle - 3, 4	2		9/3/2022	5
4.	Cycle - 5, 6	2		16/3/2022	5
5.	Cycle - 7, 8	2		23/3/2022	5
6.	Cycle - 9, 10	2		30/3/2022	5
7.	Cycle - 11, 12	2		6/4/2022	5
8.	Cycle - 13, 14	2		13/4/2022	5
9.	Cycle - 15, 16	2		20/4/2022	5
10.	Cycle - 17, 18	2		27/4/2022	5
11.	Cycle - 19, 20	2		4/5/2022	5
12.	Cycle - 21	2		11/5/2022	5
13.	Cycle - 22	2		18/5/2022	5
14.	Cycle - 23	2		25/5/2022	5
15.	Cycle - 24, 25	2		1/6/2022	5
16.	Internal Exam	2			5

Delivery Methods (DM):

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

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Mr. B. Siva Rama Krishna	Mr. B. Siva Rama Krishna	Dr. Y. Vijay Bhaskar Reddy	Dr. D. Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & 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.

hodcse@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 : DATA MINING AND DATA WAREHOUSING LAB (17CI67)

L-T-P Structure : 0-0-2 Credits : 1

Program/Sem/Sec : B.Tech., CSE, VI-Sem., Section – B A.Y : 2021 - 2022

PRE-REQUISITE: Understanding of various Data Mining Algorithms

Course Educational Objective (CEO): Students will use existing commercial or public - domain tools to perform data mining tasks to solve real world problems in various domains.

COURSE OUTCOMES (COs)

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

CO1	Understand the need of data mining and the details of different algorithms made available by popular commercial data mining software.
CO2	Solve real data mining problems by using association mining techniques with modern tools / programming.
CO3	Examine some real time Applications and obtain the results using various Data Mining Algorithms.
CO4	Improve individual / team work 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	2	3	1	-	3	-	-	-	-	-	-	2	2	3	-
CO2	2	2	3	2	3	2	-	-	-	-	-	2	2	3	-
CO3	2	2	3	2	3	2	-	-	-	-	-	2	2	3	-
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 to Data Mining	2	22-02-2022		TLM4	
2.	Introduction to Data Mining Software & Installation	2	08-03-2022		TLM4	
3.	Importing datasets from various repositories such as UCI, etc.,	2	15-03-2022		TLM4	
4.	Preprocessing of data sets	2	22-03-2022		TLM4	
5.	Implementation of Association Rule Mining using WEKA	2	29-03-2022		TLM4	
6.	Implementation of Association Rule Mining using WEKA	2	12-04-2022		TLM4	
7.	Implementation of various Classification Techniques using WEKA	2	19-04-2022		TLM4	
8.	Implementation of various Classification Techniques using WEKA	2	26-04-2022		TLM4	
9.	Implementation of various Clustering Techniques using WEKA	2	10-05-2022		TLM4	
10.	Implementation of various Clustering Techniques using WEKA	2	17-05-2022		TLM4	
11.	Case Study-1	2	24-05-2022		TLM4	
12.	Case Study-2	2	31-05-2022		TLM4	

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

Course Instructor	Course Coordinator	Module Coordinator	HOD
A.RAJA GOPAL	G.V.SURESH	DR.Y.V.BHASKAR REDDY	DR. D.VEERAIAH

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & 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

PROGRAM : B.Tech. VI-Sem., CSE (B), R17 Regulations

ACADEMIC YEAR : 2020-21

COURSE NAME & CODE : **PRESENTATION SKILLS - 17FE61**

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

COURSE CREDITS : 1

COURSE INSTRUCTOR : Mr. B. Sreenivasa Reddy, Asst. Professor.

Mrs.K. Sridevi, Asst. Professor.

COURSE COORDINATOR : Dr. B. Samrajya Lakshmi

PRE-REQUISITES : Students should have fundamental knowledge in making conversations in English and be with readiness to speak

Course Educational Objective : To help students make oral presentations, power point presentations, participate in group discussions and write project/research/technical reports/formal letters by gathering information and organizing ideas relevantly and coherently.

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

CO1 : Make power point presentations and oral presentations
CO2 : Use standard vocabulary contextually
CO3 : Manage skillfully through group discussions.
CO4 : Negotiate skillfully for better placement.

Course Articulation Matrix:

Course		**Program Outcomes (POs)**											
17FE61	**POs→**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
	CO1		1		3		2			3	3		2
	CO2		1		3		2			3	3		2
	CO3		1		3		2			3	3		2
	CO4		1		3		2			3	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 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):

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	25-02-2022		TLM4		
2.	Self Introduction	2	04-03-2022		TLM4	CO1	
3.	JAM- I (prepared)	2	11-03-2022		TLM4	CO1	
4.	JAM-II (Extempore)	2	18-03-2022		TLM4	CO1	
5.	Group Discussion-I	2	25-03-2022		TLM4, TLM6	CO3	
6.	Group Discussion-II	2	01-04-2022		TLM4, TLM6	CO3	
7.	Reading Comprehension/Listening Comprehension	2	08-04-2022		TLM3	CO2	
8.	MID EXAMS 11-04-2022 to 16-04-2022						
9.	Reading Comprehension/Listening Comprehension	2	22-04-2022		TLM3	CO2	
10.	Poster Presentation	2	29-04-2022		TLM2, TLM4	CO1	
11.	Power point Presentation	2	06-05-2022		TLM2, TLM4	CO1	
12.	Vocabulary(one-word substitutes/analogy/idioms	2	13-05-2022		TLM2, TLM4	CO1	
13.	Letter writing	2	20-05-2022		TLM1, TLM3	CO2	
14.	Résumé writing	2	27-05-2022		TLM1, TLM3	CO2	
15.	Mock Interviews	2	03-06-2022		TLM1, TLM3	CO4	
16.	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	10 Marks
	Record	10 Marks
Internal Test		10 Marks
Attendance		05 Marks
Viva – Voce During Regular Lab Sessions		05 Marks
Total		**40 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	10 Marks
Dialogue writing	10 Marks
Presentation	10 Marks
Interview	20 Marks
Total	**60 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)**

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1: To Attain a solid foundation in Electronics & Communication Engineering fundamentals with an attitude to pursue continuing education.
PEO2: To Function professionally in the rapidly changing world with advances in technology
PEO3: To Contribute to the needs of the society in solving technical problems using Electronics & Communication Engineering principles, tools and practices.
PEO4: To Exercise leadership qualities, at levels appropriate to their experience, this addresses issues in a responsive, ethical, and innovative manner

PROGRAMME OUTCOMES (POs)

PO1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex

% 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

engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. **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.

PO4. **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.

PO5. **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.

PO6. **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.

PO7: **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.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: 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.

PO11: 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.

PO12: 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.

Name of the Faculty	**Name of Module Coordinator**	**HOD**
1. Mr. B. Sreenivasa Reddy 2. Mrs. K. Sridevi	Dr. B. Samrajya Lakshmi	Dr. A. Rami Reddy
1. 2.		

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with 'A' Grade & 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.

hodcse@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 : SEMINAR(17PD07)
L-T-P Structure : 0-0-2 Credits : 1
Program/Sem/Sec : B.Tech., CSE, VI-Sem., Section – B A.Y : 2021 - 2022

PRE-REQUISITE: Basic knowledge in Report writing and presentation skill.

COURSE OBJECTIVE:
The main objective of Seminar is to acquire the insightful knowledge in current trends in the field of computer science and engineering and to improve oral presentation and report writing skills.

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

CO1	Review literature, analyze complex engineering problems relevant to the society and industry
CO2	Develop an insight into modern technologies, tools and systems in the field of Computer Science and Engineering
CO3	Develop communication & Presentation skills
CO4	Prepare a well organized report employing elements of technical writing and critical thinking

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	2	1	-	2	2	-	-	2	-	-	3	3	3	3
CO2	1	2	2	2	3	2	-	-	2	-	-	3	3	3	3
CO3	-	-	-	-	-	-	-	-	-	3	-	3	-	-	-
CO4	-	-	-	-	-	-	-	-	-	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).

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	1	23.02.2022		TLM2	
2.	Survey work	1	26.02.2022		TLM2	
3.	Selection of Topic	1	02.03.2022		TLM2	
4.	Review (5 Students)	1	05.03.2022		TLM2	
5.	Review (5 Students)	1	09.03.2022		TLM2	
6.	Review (5 Students)	1	16.03.2022		TLM2	
7.	Review (5 Students)	1	19.03.2022		TLM2	
8.	Review (5 Students)	1	02.03.2022		TLM2	
9.	Review (5 Students)	1	23.03.2022		TLM2	
10.	Review (5 Students)	1	26.03.2022		TLM2	
11.	Review (5 Students)	1	30.03.2022		TLM2	
12.	Review (5 Students)	1	06.04.2022		TLM2	
13.	Review (5 Students)	1	09.04.2022		TLM2	
14.	Review (5 Students)	1	13.04.2022		TLM2	
15.	Review (5 Students)	1	16.04.2022		TLM2	
16.	Review (5 Students)	1	20.04.2022		TLM2	
17.	Review (5 Students)	1	23.04.2022		TLM2	
18.	Review (5 Students)	1	27.04.2022		TLM2	
19.	Review (5 Students)	1	30.04.2022		TLM2	
20.	Review (5 Students)	1	04.05.2022		TLM2	
21.	Review (5 Students)	1	07.05.2022		TLM2	
22.	Review (5 Students)	1	11.05.2022		TLM2	
23.	Review (5 Students)	1	18.05.2022		TLM2	
24.	Review (5 Students)	1	21.05.2022		TLM2	
25.	Review (5 Students)	1	25.05.2022		TLM2	

26.	Review (5 Students)	1	28.05.2022		TLM2	
27.	Report Submission	1	01.06.2022		TLM2	
28.	Final Evaluation	1	04.06.2022		TLM2	

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

Faculty/Co-ordinator	HOD
A.RAJA GOPAL	DR. D.VEERAIAH

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution

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

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

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

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE HANDOUT

Part-A

PROGRAM	**:** B.Tech.VI Semester, Computer Science Engineering (Section-B)
ACADEMIC YEAR	**:** 2021-22
COURSE NAME & CODE	**:** Employability Enhancement Skills-II – 17PD08
L-T-P STRUCTURE	**:** 1 (L) – 0 (T) -0
COURSE CREDITS	**:** NIL
COURSE INSTRUCTOR	**: Mrs.T. Radha Rani, Assistant Professor; Mrs. K. Samaikya, Assistant Professor**
COURSE COORDINATOR	**: Mrs. K. Samaikya, Assistant Professor**
PRE-REQUISITES	**:** Nil

COURSE EDUCATIONAL OBJECTIVES (CEOs):

To develop language & communication skills to augment professional development

To inculcate industry-readiness skills among professional students

To familiarize students with elements of Quantitative techniques, Reasoning required for placement tests.

To acquaint the students with concepts and tools that will serve as building blocks for analytical thinking

To help students in career planning and professional development

COURSE OUTCOMES (COs)

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

CO 1	To identify, analyze and apply quantitative techniques related to qualify in Placement tests.
CO 2	To effectively utilize verbal ability & communication skills to qualify in Placement tests.
CO 3	To effectively communicate in professional as well as social contexts.
CO 4	To apply key soft skills effectively in Job Interviews as well in other professional contexts.
CO 5	Inculcate lifelong learning through personal effectiveness as well as leadership.

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	3	3				3			
CO2	3	3				3	3					3			
CO3	3		3				2					2			
CO4	3					2	3	2				3			
CO5	3	3	3	3		3	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).

SYLLABUS

UNIT – I:
Verbal Ability: Tenses& Conditional Clauses
Quantitative Aptitude: Alligation or Mixture, Simple Interest and Compound Interest

UNIT – II:
Verbal Ability: Sentence Completions
Quantitative Aptitude: Time and work, Pipes and Cistern, Permutations and Combinations, Probability

UNIT – III:
Verbal Ability: Spot the Errors
Quantitative Aptitude: Time and Distance, Problems on trains, Boats and Streams, Races and Games of Skill

UNIT – IV:
Verbal Ability: Jumbled Sentences, Cloze Tests
Quantitative Aptitude: Area, Volume and Surface Areas, Progressions

UNIT – V:
Verbal Ability: Advanced Reading Comprehension
Quantitative Aptitude: Clocks and Calendars, Cubes and Dice

BOS APPROVED TEXT BOOKS:

1. Objective Arithmetic, S. CHAND Publishers.
2. R.S.AGGARWAL, *Verbal & Non-Verbal Reasoning*, S. CHAND Publishers
3. Objective English. Edgar Thorpe, Pearson Education, New Delhi.2009
4. Sanjay Kumar, Pushpa Lata: Communication skills. Oxford, Delhi, 2012
5. Vocabulary Builder for Students of Engineering and Technology (A self – study manual for vocabulary Enhancement) Y.Saloman Raju, Maruthi Publishers

BOS APPROVED REFERENCE BOOKS:

1. Meenakshi Raman, Sangeetha: Technical Communication, Oxford University Press, 2008
2. Baron's Guide on GRE
3. Vocabulary Builder for Students of Engineering and Technology (A self – study manual for vocabulary Enhancement) Y.Saloman Raju, Maruthi Publishers
4. Dinesh Khattar, *The Pearson Guide to Quantitative Aptitude*, Pearson Education
5. M. Tyra, *Magical Book on Quicker Maths*, BSC Publishers Quantitative Aptitude by Arun Sharma

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

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 course- Tenses	1	21-02-2022		**TLM1**	CO1	T1, T2	
2.	Introduction –Alligation or Mixture	1	24-02-2022		**TLM1**	CO1	T1, T2	
3.	Tenses worksheet	1	28-02-2022		**TLM1**	CO1	T1, T2	
4.	Problems on Alligation or Mixture	1	3-03-2022		**TLM1**	CO1	T1, T2	
5.	Conditional Clauses	1	7-03-2022		**TLM1**	CO1	T1, T2	
6.	Simple Interest & Compound Interest	1	10-03-2022		**TLM1**	CO1	T1, T2	
7.	Conditional Clauses worksheet	1	14-03-2022		**TLM1**	CO1	T1, T2	
No. of classes required to complete UNIT-I:		7			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
1.	Time and Work, Pipes and Cistern	1	17-03-2022		**TLM1**	CO2	T1, T2	
2.	Sentence Completion	1	21-03-2022		**TLM1**	CO2	T1, T2	
3.	Permutations and Combinations	1	24-03-2022		**TLM1**	CO2	T1, T2	
4.	Sentence Completion worksheet	1	28-03-2022		**TLM1**	CO2	T1, T2	
5.	Probability	1	31-03-2022		**TLM1**	CO2	T1, T2	
6.	Worksheet	1	04-04-2022		**TLM1**	CO2	T1, T2	
7.	**I Mid Examinations**	6 days	11-04-2022 to 16-04-2022					
No. of classes required to complete UNIT-II:		6			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
1.	Time and Distance	1	07-04-2022		**TLM1**	CO3	T1, T2	
2.	Error spotting	1	18-04-2022		**TLM1**	CO3	T1, T2	
3.	Problems on Trains, Boats and Streams	1	21-04-2022		**TLM1**	CO3	T1, T2	
4.	Error spotting worksheet	1	25-04-2022		**TLM1**	CO3	T1, T2	
5.	Races and Games of Skill	1	28-04-2022		**TLM1**	CO3	T1, T2	
6.	Error spotting worksheet	1	02-05-2022		**TLM1**	CO3	T1, T2	
No. of classes required to complete UNIT-III		6			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
1.	Area, Volumes and Surface Area	1	05-05-2022		**TLM1**	CO4	T1, T2	
2.	Jumbled sentences	1	09-05-2022		**TLM1**	CO4	T1, T2	
3.	Progressions	1	12-05-2022		**TLM1**	CO4	T1, T2	
4.	Jumbled sentences worksheet	1	16-05-2022		**TLM1**	CO4	T1, T2	
No. of classes required to complete UNIT-IV		4			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
1.	Clocks & Calendars	1	19-05-2022		**TLM1**	CO5	T1, T2	
2.	Advanced Reading Comprehension passages	1	23-05-2022		**TLM1**	CO5	T1, T2	
3.	Cubes and Dice	1	26-05-2022		**TLM1**	CO5	T1, T2	
4.	Advanced Reading Comprehension passages	1	30-05-2022		**TLM1**	CO5	T1, T2	
5.	Problems	1	02-06-2022		**TLM1**	CO5	T1, T2	
6.	**II Mid Examinations**	6 days	6-6-2022 to 11-6-2022					
No. of classes required to complete UNIT-V : 5					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
1.	Advanced Topics in Unit I	1			**TLM1**	CO1	T1, T2, R1 to R5	
2.	Advanced Topics in Unit II	1			**TLM1**	CO2		
3.	Advanced Topics in Unit III	1			**TLM1**	CO3		
4.	Advanced Topics in Unit IV	1			**TLM1**	CO4		
5.	Advanced Topics in Unit V	1			**TLM1**	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

ACADEMIC CALENDAR:

Description	From	To	Weeks
Commencement of Class Work: 21-02-2022			
I Phase of Instructions	21-02-2022	09-04-2022	7 W
I Mid Examinations	11-04-2022	16-04-2022	1 W
II Phase of Instructions	18-04-2022	04-06-2022	7 W
II Mid Examinations	06-06-2022	11-06-2022	1 W
Preparation and Practical's	13-06-2022	18-06-2022	1 W
Semester End Examinations	20-06-2022	02-07-2022	2 W

Part - C

EVALUATION PROCESS: R17 Regulation

Evaluation Task	Marks
Cumulative Internal Examination (CIE) :	100
Total Marks = CIE	100

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1: Pursue higher education, entrepreneurship and research to compete at global level.
PEO2: Design and develop products innovatively in the area of computer science and engineering and in other allied fields.
PEO3: Function effectively as individuals and as members of a team in the conduct of interdisciplinary projects; and even at all the levels with ethics and necessary attitude.
PEO4: Serve ever-changing needs of the society with a pragmatic perception.

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.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO1: The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.
PSO2: The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO3: To inculcate an ability to analyze, design and implement database applications.

Position	***Course Instructor***	***Course Coordinator***	***Module Coordinator***	***HOD***
Name	**K.SAMAIKYA/** **CH. PADMA**	**K.SAMAIKYA**	**Dr. SUJITH KUMAR RATH**	**Dr. SUJITH KUMAR RATH**
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, NTR DIST., A.P.-521 230.

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

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : R.ASHOK
Course Name & Code : ANDROID TECHNOLOGIES & 17CS05
L-T-P Structure : 2-2-0 **Credits :** 3
Program/Sem/Sec : B.Tech.–CSE/VI Sem/Sec-C **A.Y.** : 2021-22

PRE-REQUISITE: Knowledge in Java Programming

COURSE EDUCATIONAL OBJECTIVES (CEOs): This course is designed to learn the basics of Android platform and get to understand the application lifecycle and able implement applications using latest android concepts.

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

CO1	**Understand** the fundamentals of Android Platform
CO2	**Design** UI using various UI Components of Android Platform
CO3	**Develop** android apps using Intents & Broadcast receivers of Android Platform
CO4	**Analyze** different data repositories in Android Platform
CO5	**Explore** various advanced concepts in Android Platform

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	2	2	-	-	-	-	-	-	-	-	-	1	2	-	-
CO2	2	1	3	-	3	-	-	-	-	-	-	1	3	-	-
CO3	2	2	3	-	3	-	-	-	-	-	-	1	3	-	-
CO4	2	1	2	-	3	-	-	-	-	-	-	1	2	-	3
CO5	2	1	2	-	3	1	-	-	-	-	-	1	3	-	3

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

TEXT BOOKS:

T1 Reto Meier, ―Professional Android 4 Application Development‖, Wiley India (Wrox), 2012.

T2 James C Sheusi, ―Android Application Development for Java Programmers‖, Cengage Learning, 2013.

REFERENCE BOOKS:

R1 Wei-Meng Lee, ―Beginning Android 4 Application Development‖, Wiley India (Wrox), 2013

R2 https://developer.android.com/index.html

R3 https://www.tutorialspoint.com/android/index.htm

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: INTRODUCTION TO ANDROID PLATFORM

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.	Overview (Why Android?, Features, Applications, History)	1	21/02/2022			
2.	Environment Setup	1	22/02/2022			
3.	Architecture	1	24/02/2022			
4.	Emulator, Dalvik Virtual Machine	1	26/02/2022			
5.	Application Components	1	28/02/2022			
6.	Resources, Manifest File	1	03/03/2022			
7.	Android Application Life Cycle – Activities	1	05/03/2022			
8.	Activity Life Cycle	1	07/03/2022			
9.	States and its Monitoring	1	08/03/2022			
10.	Services – Services States	1	10/03/2022			
11.	Life Cycle of States	1	12/03/2022			
12.	**Tutorial – 1**	1	14/03/2022			
No. of classes required to complete UNIT-I: 12				**No. of classes taken: 15**		

UNIT-II: ANDROID USER INTERFACE

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.	**UI Components:** View, TextView, ImageView	1	15/03/2022			
2.	Button, EditText	1	17/03/2022			
3.	Spinner, Check Box, Radio Button	1	19/03/2022			
4.	Rating Bar, Switch, Seek Bar, Search View	1	21/03/2022			
5.	**Measurements:** Device and Pixel Density Independent measuring units	2	22/03/2022			
6.	**UI Layouts:** Linear, Relative, Constraint Layouts	2	24/03/2022			
7.	Grid and Table Layouts, Styles and Themes.	1	26/03/2022			
8.	**Event Handling:** Handling clicks or changes of various UI components	1	28/03/2022			
9.	**Fragments:** Creating fragments, Lifecycle of fragments	1	29/03/2022			
10.	Types of fragments	1	31/03/2022			
11.	Fragment states	1	04/04/2022			
12.	**Tutorial – 2**	1	07/04/2022			
No. of classes required to complete UNIT-II: 14				**No. of classes taken:12**		

UNIT-III: INTENTS AND BROADCASTS

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.	**Intents** – Using intents to launch Activities, Explicitly starting new Activity	1	09/04/2022			
2.	Implicit Intents, Passing data to Intents, Getting results from Activities	2	21/04/2022			
3.	Using Intent to dial a number and to send an SMS	1	23/04/2022			
4.	**Broadcast Receivers** – Using Intent filters to service implicit Intents	1	25/04/2022			
5.	Resolving Intent filters	1	26/04/2022			
6.	Finding and using Intents received within an Activity	1	28/04/2022			
7.	**Notifications** – Creating Notifications	1	30/04/2022			
8.	Displaying notifications	1	02/05/2022			
9.	Displaying Toasts	1	05/05/2022			
10.	**Tutorial – 3**	1	07/05/2022			
No. of classes required to complete UNIT-III: 11				**No. of classes taken:**		

UNIT-IV: DATA STORAGE

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.	**Shared Preferences:** Creating shared preferences	1	09/05/2022			
2.	Saving and retrieving data using Shared Preference	1	10/05/2022			
3.	**Files:** Using application specific folders and files, creating files	1	12/05/2022			
4.	Reading data from files, Listing contents of a directory	2	14/05/2022			
5.	**Database:** Introduction to SQLite database, creating and opening a database	2	16/05/2022			
6.	Creating Tables, Inserting, Retrieving and Deleting Data	2	17/05/2022			
7.	**Content Providers -** Registering Content Providers	1	19/05/2022			
8.	Using content Providers (insert, delete, retrieve and update)	2	21/05/2022			
9.	**Tutorial – 4**	1	23/05/2022			
No. of classes required to complete UNIT-IV: 13				**No. of classes taken:**		

UNIT-V: ADVANCED TOPICS

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.	**Location Based Services** - Finding Current Location and showing location on the Map	1	24/05/2022			
2.	Updating Location, RSS Feeds	2	26/05/2022			
3.	Alarms, Using Camera	2	28/05/2022			

4.	Gestures, Integrating PHP/MySQL	2	30/05/2022			
5.	**Using Internet Resources** – Connecting to Internet Resource	1	31/05/2022			
6.	Using Download Manager	1	02/05/2022			
7.	Publishing Android Application	2	04/05/2022			
8.	**Tutorial – 5**	1	04/05/2022			
No. of classes required to complete UNIT-V: 12				**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 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	Q=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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:** To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.
PSO 2	**Data Engineering:** To inculcate ability to Analyze, 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.

Title	**Course Instructor**	**Course Coordinator**	**Module Coordinator**	**Head of the Department**
Name of the Faculty	**Mr. R. Ashok**	**Mr. B. Siva Rama Krishna**	**Dr. Y. Vijay Bhaskar Reddy**	**Dr. D. Veeraiah**
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)
Accredited by NAAC-'A'&NBA(Under_Tier-I),Grade ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi. and Affiliated to JNTUK, Kakinada
L.B.REDDY NAGAR, MYLAVARAM, NTR DIST., A.P.-521 230.
http://www.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

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

ACADEMIC YEAR : 2021-22

COURSE NAME & CODE : Data Mining and Data Warehousing (DMDW) – 17CI16

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr. G.V.Suresh

COURSE COORDINATOR: Mr. G.V.Suresh

PRE-REQUISITE: DBMS, Probability and Statistics.

COURSE OBJECTIVE:Students will be enabled to understand and implement classical models and algorithms in data warehousing and data mining. They will learn how to analyze the data, identify the problems, and choose the relevant models and algorithms to apply. They will further be able to assess the strengths and weaknesses of various methods and algorithms and to analyze their behavior.

COURSE OUTCOMES (COs): At the end of the course, students are able to

CO 1	Understand the basic concepts of data warehouse & data mining.
CO 2	Apply data pre-processing, generalization and data characterization techniques to provide suitable input for a range of data mining algorithms.
CO 3	Analyze and provide solutions for real world problems using mining association techniques.
CO 4	Examine the different classification & clustering techniques in data mining.
CO5	Apply data mining techniques to complex data objects like spatial data, multimedia data and web mining.

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	1	-	-	-	-	-	-	-	-	1	-	3	-
CO2	3	3	1	1	1	-	-	-	-	-	-	1	1	3	-
CO3	2	3	3	-	1	1	-	-	-	-	-	2	1	3	-
CO4	3	3	3	1	1	1	-	-	-	-	-	2	2	3	-
CO5	2	3	2	-	-	-	-	-	-	-	-	1	1	3	-

Note: Enter Correlation Levels **1** or **2** or **3.** If there is no correlation, **put '-'**
1- Lightly(33%) **2 -** Moderately(66%), **3 -** Strongly (100%).

BOS APPROVED TEXT BOOKS:

T1 J. Han, M. Kamber, "Data Mining: Concepts and Techniques", Harcourt India / Morgan Kauffman, 2001

BOS APPROVED REFERENCE BOOKS:

R1 SamAnahory,DennisMurry, "DataWarehousing in the real world", Pearson Education 2003.

R2 DavidHand,HeikkiManila,PadhraicSymth,"Principles of Data Mining", PHI 2004.

R3 W.H.Inmon,"Building the Data Warehouse", Wiley, 3rd Edition, 2003.

R4PaulrajPonniah, "Data Warehousing Fundamentals", Wiley-Interscience Publication, 2003

PART-B

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

UNIT-I:Introduction to Data mining and Data warehouse

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.	Fundamentals of data mining	1	22/02/22		**TLM1**	CO1	
2.	Data Mining functionalities and classification of data mining systems	1	23/02/22		**TLM1**	CO1	
3.	Major issues in data mining, Applications of data Mining	1	24/02/22		**TLM1**	CO1	
4.	Introduction to Data warehouse	1	25/02/22		**TLM1**	CO1	
5.	Introduction-Data, Info. Importance of DMDW	1	02/03/22		**TLM1**	CO1	
6.	Data warehouse Need, OLTP vs OLAP	1	03/03/22		**TLM1**	CO1	
7.	Multidimensional data models	1	04/03/22		**TLM1**	CO1	
8.	DWH Architecture	1	08/03/22		**TLM1**	CO1	
9.	Data warehouse Implementation	1	09/03/22		**TLM2**	CO1	
10.	Further development of data cube Technology, From DWH TO Data	1	10/03/22		**TLM2**	CO1	

	Mining						
No. of classes required to complete UNIT-I		10	No. of classes taken:				

UNIT-II: Data Pre-Processing

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
11.	Why we need pre-processing	1	11/03/22		**TLM1**	CO2	
12.	Data Cleaning	1	15/03/22		**TLM1**	CO2	
13.	Data Integration	1	16/03/22		**TLM1**	CO2	
14.	Data Transformation	1	17/03/22		**TLM1**	CO2	
15.	Data Reduction	1	22/03/22		**TLM2**	CO2	
16.	Discretization & Concept hierarchy generation	1	23/03/22		**TLM3**	CO2	
17.	Data mining primitives	1	24/03/22		**TLM2**	CO2	
18.	DMQL,Concept description and Characterizations	1	25/03/22		**TLM2**	CO2	
19.	Class Comparisons, Data generalization and summarization based on characterization	1	29/03/22		**TLM2**	CO2	
20.	Analytical characterization Discrimination between different classes	1	30/03/22		**TLM2**	CO2	
21.	Descriptive Statistical Measures	1	30/03/22		**TLM2**	CO2	
No. of classes required to complete UNIT-II		11	No. of classes taken				

UNIT-III:Association Rule mining

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
22.	Association rule mining,	1	01/04/22		**TLM1**	CO3	
23.	Frequent pattern, support and confidence	1	06/04/22		**TLM2**	CO3	
24.	Apriori algorithm	2	07/04/22		**TLM1**	CO3	

25.	FP growth algorithm	2	08/04/22		**TLM1**	CO3	
26.	Single dimensional Boolean association from transitional database	1	12/04/22		**TLM3**	CO3	
27.	Multi-level association rules from transitional databases	1	13/04/22		**TLM1**	CO3	
28.	From association rule mining to correlation analysis	1	19/04/22		**TLM2**	CO3	
29.	Constraint based association rule mining	1	20/04/22		**TLM2**	CO3	
No. of classes required to complete UNIT-III		10	No. of classes taken:				

UNIT-IV:Classification and Perdition Analysis

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
30.	Issues regarding classification and	1	21/04/22		**TLM1**	CO4	
31.	Classification by decision tree induction	2	22/04/22		**TLM1**	CO4	
32.	Bayesian classification	1	26/04/22		**TLM1**	CO4	
33.	Support vector machine	1	27/04/22		**TLM2**	CO4	
34.	Classification based on concepts from association rule mining	1	28/04/22		**TLM1**	CO4	
35.	Rule based induction algorithm	1	29/04/22		**TLM1**	CO4	
36.	Prediction	1	03/05/22		**TLM1**	CO4	
37.	Classifier accuracy	1	04/05/22		**TLM1**	CO4	
38.	No. of classes required to complete UNIT-IV	9	No. of classes taken:				

UNIT-V:clustering and applications of data mining

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
39.	Types of data in cluster analysis	1	05/05/22 06/05/22		**TLM2**	CO5	
40.	A categorization of major clustering	1	10/05/22 11/05/22		**TLM2**	CO5	

	methods						
41.	Partitioning methods	1	12/05/22 13/05/22		**TLM2**	CO5	
42.	Density based methods	1	17/05/22 18/05/22		**TLM2**	CO5	
43.	Grid based methods	1	19/05/22 20/05/22		**TLM2**	CO5	
44.	Model based clustering methods	1	24/05/22 25/05/22		**TLM2**	CO5	
45.	Outlier analysis	1	26/05/22 27/05/22 31/05/22		**TLM3**		
46.	Overview of data mining applications	1	01/06/22 01/06/22		**TLM2**	CO5	
47.	Web mining introduction, terminology and characteristics	1	02/06/22 03/06/22 07/06/22		**TLM2**	CO5	
48.	Web content mining, Web usage mining and Web structure mining	1	08/06/22 09/06/22		**TLM2**	CO5	
No. of classes required to complete UNIT-V		10	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
49.	Advanced topics in mining , Research topics related to social networking	1	10/06/22					

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 Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5

I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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	The ability to apply Software Engineering practices and strategies in software project development using open-source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate an ability to analyze, design and implement database applications.

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

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE HANDOUT

PART – A

Name of Course Instructor : Smt.M.Ramya Harika
Course Name & Code : **MICROPROCESSORS AND MICROCONTROLLERS** [17EC22]
L-T-P Structure : 3-0-0 Credits : 3
Program/Sem/Sec : B.Tech., CSE., VI-Sem., Sections- C A.Y : 2021-22

Pre-requisites: Digital Circuits, Computer organization

Course Educational Objectives: In this course student will learn about the Architecture of 8086 Microprocessor and 8051 Microcontroller and their Assembly Language Programming, interfacing Memory and Various Peripherals with 8086 Microprocessor/8051 Microcontroller and concepts of Interrupts and Serial Communication in reference to 8086.

COURSE OUTCOMES (COs): At the end of the course, students are able to

CO 1 : **Understand** the architecture and operation of 8086 µprocessor & 8051µcontroller
CO 2 : **Apply** the instructions of 8086/8051 for various applications.
CO 3 : **Analyze** the operation of peripherals and devices for interfacing applications.
CO4 : **Design** a 8086/8051 based system by interfacing memory, peripherals and I/O devices

COURSE ARTICULATION MATRIX:

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

Note: 1- Slight (Low), **2** – Moderate (Medium), **3** - Substantial (High), no correlation **'-'**

BOS APPROVED TEXT BOOKS:

T1 Douglas V. Hall, "Micro Processors & Interfacing", TMH, 2007.
T2 A. K. Ray and K.M. Bhurchandi, Advanced Microprocessor And Peripherals,2nd Edition TMH Publishers.
T3 Muhammad Ali Mazidi, Janice GillispieMazidi, Rolin D. Mckinlay "Microcontrollers and Embedded System", Pearson Education Publishers, 2nd Edition

BOS APPROVED REFERENCE BOOKS:

R1 Raj Kamal, Microcontrollers Architecture, Programming, Interfacing and System Design, Pearson Education Publishers.
R2 J. K. Uffenbeck, "The 8088 and 8086 Micro Processors", PHI, 4th Edition, 2003.
R3 Ajay Deshmukh, "Micro Controllers-Theory and Applications", Tata McGraw Hill Publishers.
R4 Kenneth J. Ayala, "The 8051 Micro Controller", Cengage Learning Publishers, 3rd Edition, 2000.

Prescribed Syllabus:

17EC22 - MICROPROCESSORS AND MICROCONTROLLERS

UNIT – I

Microprocessor Architecture: Introduction to Microprocessors-Purpose of a Microprocessor, different types of Microprocessors, their features and their comparison; 8086 Microprocessor-Architecture , Special functions of General purpose registers, 8086 flag register and function of 8086 Flags, Addressing modes of 8086.

Instruction Set: Instruction set of 8086, Assembly language programs involving logical, Branch and Call instructions, Sorting, Evaluation of Arithmetic Expressions, String manipulation, Assembler directives, simple programs, procedures and macros.

UNIT – II

8086 Memory and I/O Interfacing: Pin diagram of 8086, Minimum mode and maximum mode of operation, Timing diagram, Memory (Static RAM & EPROM) and I/O interfacing to 8086. Interrupt structure of 8086, Interrupt Vector table, Interrupt service routines.

UNIT – III

Peripherals and Devices: DMA Controller 8237, Interrupt Controller 8259 and Cascading, USART 8251 8255 PPI – various modes of operation, Keyboard, D/A and A/D converter interfacing.

UNIT – IV

Microcontroller: 8051 Microcontroller Architecture, Pin Diagram, Addressing modes, Instruction Set and Programs, 8051 Memory and I/O interfacing .

UNIT – V

8051 Interfacing: Modes of timer operation, Serial port operation, Interrupt structure of 8051, Interfacing of Seven segment Displays, Stepper Motor and Serial/Parallel Printer

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Microprocessor Architecture & Instruction Set

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.	Discussion of Syllabus, Course Outcomes and Introduction to µprocessors	1	22-02-2022			
2.	Types of µprocessors, features & comparison, µprocessor- Architecture	1	23-02-2022			
3.	General purpose registers , their special functions, Flag register and function of flags	1	24-02-2022			
4.	Addressing modes of 8086	1	02-03-2022			
5.	Instruction set of 8086	1	03-03-2022			
6.	Assembler directives, Procedures and macros	1	08-03-2022			
7.	Assembly language programs involving logical, Branch and Call instructions.	1	09-03-2022			
8.	Assembly language programs for Sorting and Arithmetic Expressions	1	10-03-2022			
9.	String manipulation Instructions	1	15-03-2022			
10.	**Tutorial,/Assignment**	1	16-03-2022			

UNIT-II : 8086 Memory and I/O Interfacing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
11.	Pin diagram of 8086	1	17-03-2022			
12.	Minimum mode of operation	1	22-03-2022			
13.	Maximum mode of operation	1	23-03-2022			
14.	Timing diagrams	1	24-03-2022			
15.	Memory interfacing to 8086	1	29-03-2022			
16.	Static RAM , EPROM and I/O interfacing to 8086	1	30-03-2022			
17.	Interrupt structure of 8086	1	31-03-2022			
18.	Interrupt service routines & Interrupt Vector table	1	06-04-2022			
19.	**Tutorial,/Assignment**	1	07-04-2022			

UNIT-III: Peripherals and Devices

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.	DMA Controller 8237	1	19-04-2022			
21.	Interrupt Controller 8259	1	20-04-2022			
22.	Cascading of 8259	1	21-04-2022			
23.	USART 8251	1	26-04-2022			
24.	8255 PPI Modes of operation	1	27-04-2022			
25.	Keyboard interfacing	1	28-04-2022			
26.	Digital to Analog Converter interfacing	1	04-05-2022			
27.	Analog to Digital Converter interfacing	1	05-05-2022			
28.	**Tutorial,/Assignment**	1	10-05-2022			

UNIT-IV : Microcontroller

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.	8051 µcontroller Architecture	1	11-05-2022			
30.	8051Pin Diagram	1	12-05-2022			
31.	Addressing modes of µcontroller	1	17-05-2022			
32.	8051 Instruction Set	1	18-05-2022			
33.	8051 Programs	1	19-05-2022			
34.	8051 Memory interfacing & I/O interfacing	1	24-05-2022			
35.	**Tutorial,/Assignment**	1	25-05-2022			

UNIT-V : 8051 Interfacing

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.	Modes of timer operation	1	26-05-2022			
37.	Serial port operation	1	31-05-2022			
38.	Interrupt structure of 8051	1	01-06-2022			
39.	Interfacing of Seven segment Displays, Stepper Motor and Serial/Parallel Printer interfacing	1	02-06-2022			
40.	**Tutorial,/Assignment**	1	02-06-2022			

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

Academic Calendar: 2021– 22 (IV Semester)

B.Tech VI Semester - 2017 Admitted Batch			
Class work Commence From	**21-02-2022**		
Description	**From**	**To**	**Weeks**
I Phase of Instructions	**21-02-2022**	09-04-2022	7 Weeks
I Mid Examinations	11-04-2022	16-04-2022	1 Week
II Phase Instructions	18-04-2022	**04-06-2022**	7 Weeks
II Mid Examinations	06-06-2022	11-06-2022	1 Week
Preparation & Practicals	13-06-2022	18-06-2022	1 Week
Semester End Examinations	20-06-2022	02-07-2022	2 Weeks

EVALUATION PROCESS:

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
Total Marks = CIE + SEE	**100**

CO 1	**Understand** the architecture and operation of 8086 µprocessor & 8051µcontroller	Describe, Explain, Paraphrase, Restate ,Associate, Contrast, Summarize, Differentiate, Interpret, Discuss
CO 2	**Apply** the instructions of 8086/8051 for various applications.	Calculate, Predict, Apply, Solve, Illustrate, Use, Demonstrate, Determine, Model, Experiment, Show, Examine, Modify
CO 3	**Analyze** the operation and interfacing of peripherals like memory and I/O devices to 8086/8051 for different applications.	Classify, Outline, Break down, Categorize, Analyze, Diagram, Illustrate, Infer, Select
CO 4	**Design** a 8086/8051 based system by interfacing memory, peripherals and I/O devices	Categorize, Analyze, Illustrate, Infer Select

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 modeling 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:	**Communication:** Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.
PSO 2:	**VLSI and Embedded Systems:** 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
PSO 3:	**Signal Processing:** Apply the Signal processing techniques to synthesize and realize the issues related to real time applications

Course Instructor	Course Coordinator	Module Coordinator	HOD
[M.RAMYA HARIKA]	[Mr. K.SASI BHUSHAN]	[Dr.P.LACHI REDDY]	[Dr.Y. AMAR BABU]

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)
Accredited by NAAC & NBA (Under Tier - I) and 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://www.lbrce.ac.in, cselbreddy@gmail.com, Phone: 08659-222933, Fax: 08659-222931
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PROGRAM : B.Tech. VI-Sem. (C)

ACADEMIC YEAR : 2021-22

COURSE NAME & CODE : **Data Communications & Computer Networks –17CI17**

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **Mrs B.Swathi**

COURSE COORDINATOR : **Dr.K Naga Prasanthi**

PRE-REQUISITE: Basic Computer Fundamentals and Concepts

COURSE OBJECTIVE: The students will be able to Build an understanding ofthe fundamental concepts of computer networking and gain expertise in some specific areas of networking such as the design and maintenance of individual networks.

COURSE OUTCOMES (CO): After the completion of this course, student will be able to:
CO1: Understand how the data is transmitted from point-to-point.
CO2: Summarize Data Link Layer Protocols.
CO3: Analyze different Medium Access Control protocols.
CO4: Evaluate different routing protocols and Transport layer protocols.
CO5: Understand the concepts of Presentation and Application Layer Protocols

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**	**2**	**2**											**1**	
CO2	**1**	**2**	**2**									**1**		**1**	
CO3	**1**	**3**	**3**									**1**		**1**	
CO4	**2**	**3**	**3**	**1**								**1**	**1**		
CO5	**2**	**2**	**2**									**1**	**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).

TEXT BOOKS:

T1 1 S. Tanenbaum —Computer Network: Second Ed. Prentice Hall, India.

2 B. A. Frouzan, Data Communication, Tata Mc Graw Hill.

REFERENCE BOOKS:

R1 D. Berekas an R. Gallager, ―Data Networks:, second Ed. Prentice Hall, India.

R2 D. E. Coner, ―Intertworking with TCP/IP‖, Vol-I.Prentice Hall India.

R3 G. E. Keiser, ―Local Area Network‖, Mc Graw Hill, International Ed.

R4 W. Stalling, ―Data & Computer Communications‖, Maxwell Macmillan Internation Ed.

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	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to computer networks	1	21-2-22		TLM2	CO1	T1,T2	
2.	Review of ISO-OSI Model	1	23-2-22		TLM2	CO1	T1	
3.	Introduction to TCP/IP Model	1	27-2-22		TLM2	CO1	T1	
4.	Pulse Code Modulation (PCM) Differential Pulse Code	2	28-2-22 02-03-22		TLM2	CO1	T1,R3	
5.	Delta Modulation (DM)	1	5-3-22		TLM2	CO1	T1,R3	
6.	Multiplexing Techniques; Frequency Division, Time Division	1	7-3-22		TLM2	CO1	T1,R1	
7.	Transmission Media: Wires, Cables,Fibre Optic.	1	14-3-22		TLM2	CO1	T1,R2	
8.	Error Detection and Correction:	1	16-3-22		TLM2	CO1	T1,T2	
9.	Cyclic Redundancy Code & Hamming Code	1	19-3-22		TLM2	CO1	T1	
No. of classes required to complete UNIT-I		10			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.	**DATA LINK LAYER PROTOCOLS**	1	23-3-22		TLM2	CO2	T1,R1	
11.	**Stop and Wait Protocols:** Noise free channels	1	26-3-22		TLM2	CO2	T1,R1	
12.	Noisy channels, performance and efficiency	1	28-3-22		TLM2	CO2	T1,R2	
13.	**Sliding WindowProtocols:** Go Back	2	30-3-22		TLM2	CO2	T1,R3	
14.	Selective Repeat ARQ	1	30-3-22		TLM2	CO2	T1,R2	
15.	performance and efficiency	1	4-4-22		TLM2	CO2	T1,R2	
16.	verification of protocol	1	6-4-22		TLM2	CO2	T1,R3	
17.	HDLC data link protocol	1	9-4-22		TLM2	CO2	T1,R3	
No. of classes required to complete UNIT-II		9			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.	**MEDIUM ACCESS CONTROL SUB LAYER**-Concept of Random Access	1	20-4-22		TLM2	CO3	T1,R3	
19.	Pure ALOHA, throughput characteristics of ALOHA, S-ALOHA	1	23-4-22		TLM2	CO3	T1	
20.	LAN: IEEE 802.3, 802.4 and 802.5 Protocols, performance of Ethernet.	1	25-4-22		TLM2	CO3	T1	
21.	Token Ring Protocol, FDDI Protocol, General Principles	1	27-4-22		TLM2	CO3	T1	
22.	Virtual circuits and datagram‘s, Windows flow	1	30-4-22		TLM2	CO3	T1,R2	

	control							
23.	Packet Discarding, Traffic Shaping	1	02-5-22		TLM2	CO3	T1	
24.	Choke RSVP, Internetworking using Bridge, Routers and Gateways	1	04-5-22		TLM2	CO3	T1	
No. of classes required to complete UNIT-III		10			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.	**Routing Algorithms:** Optimality principle, shortest path routing - Dijkstra, Flooding and broadcasting	1	7-5-22		TLM2	CO4	T1,R1	
26.	distance vector routing, link state routing	1	9-5-22		TLM2	CO4	T1	
27.	flow based routing, Multicasting routing flow and congestion control, Internet Architecture and Addressing	1	11-5-22		TLM2	CO4	T1	
28.	**Transport Layer:** Design issues, Quality of Services	1	14-5-22		TLM2	CO4	T1	
29.	Primitives Connection Management: Addressing, Connection Establishment and Releases	1	16-5-22		TLM2	CO4	T1	
30.	Flow control and Buffering, Crash recovery	1	18-5-22		TLM2	CO4	T1	
31.	Element of TCP/IP protocol: User Data gram Protocol (UDP)	1	21-5-22		TLM2	CO4	T1	
No. of classes required to complete UNIT-IV		10			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
32.	**Distributed Applications**	1	23-5-22		TLM2	CO5	T1,R3	
33.	Electronic Mail	1	25-5-22		TLM2	CO5	T1,R3	
34.	SMTP and HTTP.	1	28-5-22		TLM2	CO5	T1,R4	

35.	**Overview Cryptography**: Substitutions and Transposition Ciphers	1	30-5-22		TLM2	CO5	T1,R3	
36.	Data Encryption Standard (DES)	1	01-622		TLM2	CO5	T1,R3	
37.	RSA algorithm	1	04-6-22		TLM2	CO5	T1,R3	
No. of classes required to complete UNIT-V		5			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

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	1,2,3,4,5	A=5
Evaluation of Quiz Marks: B=75% of Max(B1,B2)+25% of Min(B1,B2)	1,2,3,4,5	B=10
Evaluation of Mid Marks: C=75% of Max(C1,C2)+25% of Min(C1,C2)	1,2,3,4,5	C=20
Attendance	-	D=5
Cumulative Internal Examination : A+B+C+D	**1,2,3,4,5**	**A+B+C+D=40**
Semester End Examinations	**1,2,3,4,5**	**E=60**
Total Marks: A+B+C+D+E	**1,2,3,4,5**	**100**

PROGRAM 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.

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.

PROGRAM SPECIFIC OUTCOMES

1. PSO1:

The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.

2. PSO2:

The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.

3. PSO3:

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

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Dr.K Naga Prasanthi	Dr.K Naga Prasanthi	Dr.Ch.V.Narayana	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 : MD.Amanatulla
Course Name & Code : PHP Programming - 17CS08
L-T-P Structure : 3-0-0 Credits: 3
Program/Sem/Sec : B.Tech., CSE., VI-Sem., C Sec. A.Y:2020-21

PRE-REQUISITE: Students should have the knowledge of OOP language, web technologies.

COURSE EDUCATIONAL OBJECTIVES (CEOs): The main objective of the course is that the students will gain the knowledge necessary to design and develop dynamic, database-driven Web applications using PHP.

COURSE OUTCOMES (COs): At the end of the course, students are able to

CO 1	Identify the basic programming constructs of PHP.
CO 2	Develop programs using functions, strings and arrays.
CO 3	Apply object-oriented principles in PHP.
CO 4	Design interactive web pages by using jQuery & AJAX.
CO 5	Design data driven applications by using PHP.

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

COs	PO1	PO 2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	2	-	2	-	-	-	-	-	-	-	3	-	-
CO2	3	1	3	-	2	-	-	-	-	-	-	-	3	-	-
CO3	2	1	3	-	2	-	-	-	-	-	-	-	3	-	-
CO4	2	1	3	-	2	-	-	-	-	-	-	-	3	2	-
CO5	2	1	3	-	2	-	-	-	-	-	-	-	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).

TEXTBOOKS:

T1 Steven Holzner, - "PHP: The Complete Reference", McGraw-Hill Education, 2007.

T2 Kevin Tatroe, Peter MacIntyre, Rasmus Lerdorf,- "Programming in PHP", O'Reilly, 3rd Edition, 2013.

REFERENCE BOOKS:

R1 HTML 5 Black Book, Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and jQuery DT Editorial Services Dreamtech Publications.

R2 Lynn Beighley, Michael Morrison, - "Head First PHP & MySQL: A Brain-Friendly Guide", O'Reilly, 1st Edition.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: INTRODUCTION TO PHP

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 Course and COs	1	23/02/2022		**TLM2 TLM5**	
2.	Introduction to PHP	1	25/02/2022		**TLM2 TLM5**	
3.	Evaluation of PHP	1	26/02/2022		**TLM2 TLM5**	
4.	Defining variable and constants, PHP Data types	1	02/03/2022		**TLM2 TLM5**	
5.	Operators and Expressions.	1	04/03/2022		**TLM2 TLM5**	
6.	Making Decisions, Assignment I	1	05/03/2022		**TLM2 TLM5,6**	
7.	doing Repetitive task with looping	1	09/03/2022		**TLM2 TLM5**	
8.	Mixing decisions and looping with HTML	1	11/03/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-I: 08				No. of classes taken:		

UNIT-II: FUNCTIONS, STRING & ARRAY

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
9.	Function, Define a function,	1	12/03/2022		**TLM2 TLM5**	
10.	Call by value & Call by reference	1	16/03/2022		**TLM2 TLM5**	
11.	Recursive functions	1	18/03/2022		**TLM2 TLM5**	
12.	Creating and accessing String, Searching & Replacing String	1	19/03/2022		**TLM2 TLM5**	
13.	Formatting String, String Related Library functions	1	23/03/2022		**TLM2 TLM5**	
14.	Anatomy of an Array,	1	25/03/2022		**TLM2**	

	Assignment II				**TLM5,6**	
15.	Creating Index based and Associative array & Looping	1	26/03/2022		**TLM2 TLM5**	
16.	Some useful library functions.	1	30/03/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-II: 08				No. of classes taken:		

UNIT-III: ADVANCE PHP

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
17.	Objects, Declaring a class, new keyword, constructor and Destructor	1	01/04/2022		**TLM2 TLM5**	
18.	Access method and properties using $this variable, Public, private, protected properties and methods	1	06/04/2022		**TLM2 TLM5**	
19.	Class constant, Inheritance	1	08/04/2022		**TLM2 TLM5**	
20.	Polymorphism, Parent :: & self :: keyword, Instance of operator	1	09/04/2022		**TLM2 TLM5**	
21.	Abstract method and class	1	20/04/2022		**TLM2 TLM5**	
22.	Interface, Final. Assignment III	1	22/04/2022		**TLM2 TLM5,6**	
23.	Understanding Exceptions	1	23/04/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-III: 07				No. of classes taken:		

UNIT-IV: PHP WITH SCRIPT

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
24.	Introduction to JQuery	1	27/04/2022		**TLM2 TLM5**	
25.	Validation using JQuery	1	29/04/2022		**TLM2 TLM5**	
26.	JQuery Forms	1	30/04/2022		**TLM2 TLM5**	
27.	JQuery Examples	1	04/05/2022		**TLM2 TLM5**	
28.	Introduction to AJAX	1	06/05/2022		**TLM2 TLM5**	
29.	PHP with AJAX, Assignment IV	1	07/05/2022		**TLM2 TLM5,6**	
30.	Working with database.	1	11/05/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-IV: 07				No. of classes taken:		

UNIT-V: PHP WEB SERVICES

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.	Capturing Form Data	1	13/05/2022		**TLM2 TLM5**	
32.	Dealing with Multi-value file	1	14/05/2022		**TLM2 TLM5**	

33.	generating File uploaded form, redirecting a form after submission	1	18/05/2022		**TLM2 TLM5**	
34.	Sessions, Forms GET and POST data	1	20/05/2022		**TLM2 TLM5**	
35.	Cookies, HTTP Headers	1	21/05/2022		**TLM2 TLM5**	
36.	Introduction to RDBMS	1	25/05/2022		**TLM2 TLM5**	
37.	Connection with MySQL Database	2	27/05/2022		**TLM2 TLM5**	
38.	Performing basic database operations (DML), Assignment V	2	01/06/2022		**TLM2 TLM5,6**	
39.	Setting query parameter, Executing query	1	04/06/2022		**TLM2 TLM5**	
No. of classes required to complete UNIT-V: 10				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

PART-C

EVALUATION PROCESS (R17 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	Q=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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 teamwork**: 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	The ability to apply Software Engineering practices and strategies in software project development using open-source programming environment for the success of organization.
PSO 2	The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO 3	To inculcate an ability to analyze, design and implement database applications.

Course Instructor	Course Coordinator	Module Coordinator	HOD
(Mr.MD.Amanatulla)	(Dr. Y. V Bhaskar Reddy)	(Dr. Y. V Bhaskar Reddy)	(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, NTR DIST., A.P.-521 230.

hodcse@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 : Mr.N.Srikanth

Course Name & Code : Software Testing Methodologies- 17CS91

L-T-P Structure : 3-0-0 Credits : 3

Program/Sem/Sec : B.Tech., CSE., VI-Sem., Sections- C A.Y : 2021-22

PRE-REQUISITE **:** Software Engineering and UML

COURSE EDUCATIONAL OBJECTIVES (CEOs): The primary objective of this course is to know the importance of automation testing compared with manual testing and importance of testing in real life while developing any product/project which reduces the risk of a developer. To know how to prepare testing techniques by using flow graph, transition flows and reduction of path expressions. To study fundamental concepts in software testing including software testing objectives, process, criteria, strategies, and methods.

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

CO1: Interpret a model for testing and understand the process of testing

CO2: Visualize control flow graph and demonstrate complete path testing to achieve C1+C2 and identify the complications in a transaction flow testing and anomalies in data flow testing.

CO3: Apply domain testing strategies for different domains..

CO4: Apply reduction procedures to control flow graph and simplify it into a single path expression and understand the use of decision tables in test case design.

CO5: Identify effective approach for node reduction.

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	-	-	-	-	-	-	-	-	-	-	-	-	3
CO2	2	3	2	-	-	-	-	-	-	-	-	-	-	-	3
CO3	3	2	1	-	-	-	-	-	-	-	-	-	-	-	3
CO4	2	3	1	-	-	-	-	-	-	-	-	-	-	-	3
CO5	2	3	1	-	-	-	-	-	-	-	-	-	-	-	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).

TEXT BOOKS:

T1 A Boris Biezer; "Software Testing Techniques"; International Thomson computer Press, Second edition

REFERENCE BOOKS:

R1 Brain Marick; "The Craft of Software Testing"; Prentice Hall Series in innovative technology.

R2 Renu Rajani Pradeep Oak, "Software Testing, Effective methods, Tools and Techniques", TMHI.

R3 Dr.K.V.K.K.Prasad, "Software Testing Tools", Dreamtech

R4 "Software Testing in the Real World ", Edward Kit, Pearson.

R5 Perry, John Wiley, "Effective methods of Software Testing".

R6 https://www.youtube.com/watch?v=gPE9emPFrwo

R7 https://freevideolectures.com › Computer Science › IIT Bombay

R8 NPTEL videos : https://nptel.ac.in/courses/106105150

PART – B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I : Purpose of Testing, Taxonomy of bugs.

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 & Course Outcomes	1	22-02-2022		**TLM1**	
2.	Introduction to UNIT-I	1	23-02-2022		**TLM1**	
3.	Purpose of Testing	1	26-02-2022		**TLM1**	
4.	Dichotomies	1	02-03-2022		**TLM1/ TLM2**	
5.	model for testing	1	05-03-2022		**TLM1/ TLM2**	
6.	consequences of bugs	1	08-03-2022		**TLM1/ TLM2**	
7.	Taxonomy of bugs	1	09-03-2022		**TLM1/ TLM2**	
8.	Assignment -1	1	12-03-2022		**TLM3**	
No. of classes required to complete UNIT-I: 8				No. of classes taken:		

UNIT-II : Flow Graphs and Path testing, Transaction flow and Data flow testing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
9.	Introduction to UNIT-II	1	15-03-2022		**TLM1**	
10.	Basics concepts of path testing	1	16-03-2022		**TLM1**	
11.	predicates, path predicates and achievable paths	1	19-03-2022		**TLM1/ TLM2**	
12.	path sensitizing	1	22-03-2022		**TLM1**	
13.	path instrumentation, application of path testing	1	23-03-2022		**TLM1/ TLM2**	
14.	Transaction flow testing techniques	1	26-03-2022		**TLM1/ TLM2**	
15.	Basics of Data flow testing	1	29-03-2022		**TLM1/ TLM2**	
16.	strategies in dataflow testing	1	30-03-2022		**TLM1/ TLM2**	
17.	Application of dataflow testing	1	06-04-2022		**TLM1/ TLM2**	
18.	Assignment -2	1	09-04-2022		**TLM3**	
No. of classes required to complete UNIT-II: 10				No. of classes taken:		
I MID EXAMINATIONS FROM 11-04-2022 TO 16-04-2022						

UNIT-III : Domain Testing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
19.	Introduction to UNIT-III	1	19-04-2022		**TLM1**	
20.	Domains and paths	1	20-04-2022		**TLM1/ TLM2**	
21.	Nice & ugly domains	1	23-04-2022		**TLM1/ TLM2**	
22.	domain testing	1	26-04-2022		**TLM1/ TLM4**	
23.	domains and interfaces testing	1	27-04-2022		**TLM1/ TLM2**	
24.	domains and testability	1	30-04-2022		**TLM1/ TLM2**	
25.	Assignment -3	1	04-05-2022		**TLM3**	
No. of classes required to complete UNIT-III: 7				No. of classes taken:		

UNIT-IV : Paths, path products and Regular expressions, Logic Based Testing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
26.	Introduction to UNIT-IV	1	07-05-2022		**TLM1**	
27.	Path products & expression	1	10-05-2022		**TLM1/ TLM2**	
28.	Reduction Procedure	1	11-05-2022		**TLM1/ TLM2**	
29.	Applications	1	14-05-2022		**TLM1/ TLM2**	
30.	regular expressions & flow anomaly detection	1	17-05-2022		**TLM1/ TLM2**	
31.	Logic based testing Overview	1	18-05-2022		**TLM1/ TLM2**	
32.	decision tables, path expressions	1	21-05-2022		**TLM1/ TLM5**	
33.	kv charts, specifications	1	24-05-2022		**TLM1/ TLM2**	
34.	Assignment -4	1	25-05-2022		**TLM3**	
No. of classes required to complete UNIT-IV: 10				No. of classes taken:		

UNIT-V : State, state graphs and Transition Testing, Graph matrices and Application

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
35.	Introduction to UNIT-V	1	27-05-2022		**TLM1**	
36.	State graphs	1	27-05-2022		**TLM1/ TLM2**	
37.	Good & Bad state graphs	1	28-05-2022		**TLM1/ TLM2**	
38.	State testing, Testability tips	1	31-05-2022		**TLM1/ TLM2**	
39.	Matrix of graph, Relations, power of a matrix	1	01-06-2022		**TLM1**	
40.	Node reduction algorithm Building Tools	1	03-06-2022		**TLM1/ TLM2**	
41.	Building tools	1	04-05-2022		**TLM1/ TLM2**	
42.	Assignment -5	1	04-05-2022		**TLM3**	
No. of classes required to complete UNIT-V: 7				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 Regulations):

Evaluation Task	**Marks**
Assignment-I (Unit-I)	A1=5
Assignment-II (Unit-II)	A2=5
I-Mid Examination (Units-I & II)	M1=20
I-Quiz Examination (Units-I & II)	Q1=10
Assignment-III (Unit-III)	A3=5
Assignment-IV (Unit-IV)	A4=5
Assignment-V (Unit-V)	A5=5
II-Mid Examination (Units-III, IV & V)	M2=20
II-Quiz Examination (Units-III, IV & V)	Q2=10
Attendance	B=5
Assignment Marks = Best Four Average of A1, A2, A3, A4, A5	A=5
Mid Marks =75% of Max(M1,M2)+25% of Min(M1,M2)	M=20
Quiz Marks =75% of Max(Q1,Q2)+25% of Min(Q1,Q2)	B=10
Cumulative Internal Examination (CIE) : A+B+M+Q	40
Semester End Examination (SEE)	60
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:** 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 analyze, 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
(N.Srikanth)	(N.Srikanth)	(Dr.Ch.V.Narayana)	(Dr. D. Veeraiah)

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)
L.B. Reddy Nagar, Mylavaram-521 230. Andhra Pradesh, INDIA
Affiliated to JNTUK, Kakinada & Approved by AICTE New Delhi
.http://www.lbrce.ac.in, Phone: 08659-222933, Fax: 08659-222931

Department of Computer Science Engineering

COURSE HANDOUT

Part-A

PROGRAM : B.Tech., VI-Sem., CE

ACADEMIC YEAR : 2021-22

COURSE NAME & CODE : **Industrial Engineering & Management** – 17MB80

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **N. SAMBASIVA RAO**

COURSE COORDINATOR : Mr. U Rambabu

PRE-REQUISITE:

COURSE OBJECTIVE: Principles of management, Human resource management, Production management, Project management.

1. To make students understand management, its principles, contribution to management, organization, and its basic issues and types
2. To make student s understand the concept of plant location and its factors and plant layout and types, method of production and work study importance
3. To understand the purpose and function of statistical quality control and material management techniques
4. To make students understand the concept of HRM and its functions
5. To make students understand PERT & CPM methods in effective project management and need of project crashing and its consequence on cost of project

COURSE OUTCOMES (CO)

CO1	Apply management principles to the particle situations to be in a position to know which type of business organization structure suits
CO2	Able to make decision making relating to the problems in operations and production
CO3	Able to improve quality of working through SQC techniques and to take effective decision making relating to reduce the investment in materials through better
CO4	Able to manage people in working environment with the practices of HRM across corporate businesses
CO5	Able to use PERT & CPM techniques in effective project management to identify critical path and try to complete projects on time as well as reducing the project

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

COs	a	b	c	d	e	f	g	h	i	j	k	l	PSOa	PSOb	PSOc	PSOd
CO1	-	-	-	2	3	2	-	-	2	-	3	3	-	-	-	-
CO2	-	-	-	2	3	2	-	-	2	-	3	3	-	-	-	-
CO3	-	-	-	2	3	2	-	-	2	-	3	3	-	-	-	-
CO4	-	-	-	2	3	2	-	-	2	-	3	3	-	-	-	-
CO5	-	-	-	2	3	2	-	-	2	-	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).

BOS APPROVED TEXT BOOKS:

T1 Dr. A.R.Aryasri, Management Science, TMH, 10th edition, 2012

BOS APPROVED REFERENCE BOOKS:

R1 Koontz &weihrich -Essentials of management, TMH, 10th edition, 2015

R2 Stoner, Freeman, Gilbert, Management, 6th edition Pearson education, New Delhi, 2004

R3 Bernard W. Taylor-Introduction to Management Science Twelfth Edition

O.P. Khana, Industrial engineering and Management L.S.Srinath, PERT & CPM

Part-B

COURSE DELIVERY PLAN (LESSON PLAN)
UNIT – I: Introduction

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, Course Outcomes, Management - Definition, Nature	01	21.02.2022		**TLM1**	CO1	T1	
2.	Importance of management Functions of Management	01	22.02.2022		**TLM1**	CO1	T1	
3.	Taylor's scientific management theory	01	26.02.2022		**TLM1**	CO1	T1	
4.	Fayal's principles of management	01	28.02.2022		**TLM1**	CO1	T1	
5.	Contribution of Elton mayo, Maslow	01	05.03.2022		**TLM1**	CO3	T1	
6.	Herzberg, Douglas MC Gregor,	01	07.03.2022		**TLM2**	CO1	T1	
7.	Basic Concepts of Organization - Authority, Responsibility Delegation of Authority, span of control, departmentation	01	08.03.2022		**TLM1**	CO1	T1	
8.	Organization structures (Line organization, Line a staff organization	01	12.03.2022		**TLM3**	CO1	T1	
9.	Functional organization, Committee organization, Matrix organization	01	14.03.2022		**TLM6**	CO1	T1	
No. of classes required to complete UNIT-I		09		No. of classes taken:				

UNIT – II Operations Management

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-II	01	15.03.2022		**TLM1**	CO2	T1	
2.	Plant location	01	19.03.2022		**TLM1**	CO2	T1	
3.	Factors influencing location	01	21.03.2022		**TLM2**	CO2	T1	

4.	Principles and types of plant layouts	01	22.03.2022		**TLM1**	CO2	T1	
5.	Methods of production Job, batch and mass production	01	26.03.2022		**TLM2**	CO2	T1	
6.	Work study, Basic procedure involved in method study	01	28.03.2022		**TLM1**	CO2	T1	
7.	Work measurement	01	29.03.2022		**TLM1**	CO2	T1	
No. of classes required to complete UNIT-II		07		No. of classes taken:				

UNIT-III: Statistical Quality Control & Materials Management

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-III,	01	04.04.2022		**TLM1**	CO3	T1	
2.	Statistical quality control	01	09.04.2022		**TLM1**	CO3	T1	
3.	Concept of Quality & Quality Control	01	18.04.2022		**TLM2**	CO3	T1	
4.	functions ,Meaningof SQC	01	19.04.2022		**TLM1**	CO3	T1	
5.	Variables and attributes		23.04.2022			CO3	T1	
6.	X chart, R Chart, C Chart, P Chart,(simple Problems)	01	25.04.2022		**TLM1**	CO3	T1	
7.	X chart, R Chart, C Chart, P Chart,(simple Problems)	01	26.04.2022		**TLM1**	CO3	T1	
8.	Acceptance sampling, Sampling plans	01	30.04.2022		**TLM1**	CO3	T1	
9.	Deming 's contribution to quality.	01	02.05.2022		**TLM1**	CO3	T1	
10.	Materials management - Meaning and objectives	01	07.05.2022		**TLM1**	CO3	T1	
11.	inventory control-Need for inventory control	01	09.05.2022		**TLM1**	CO3	T1	
12.	Purchase procedure	01	10.05.2022		**TLM1**	CO3	T1	
13.	Store records:EOQ, ABC analysis, Stock levels	01	14.05.2022		**TLM1**	CO3	T1	
No. of classes required to complete UNIT-III		13		No. of classes taken:				

UNIT IV – Human Resource management (HRM):

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-IV	01	14.05.2022		**TLM1**	CO2	T1	
2.	Concepts of HRM	01	16.05.2022		**TLM1**	CO2	T1	

3.	Basic functions of HR manager: Man power plarming	01	17.05.2022		**TLM1**	CO2	T1	
4.	Recruitment , Selection, Training and development	01	21.05.2022		**TLM1**	CO4	T1	
5.	Placement, Wage and salary administration	01	23.05.2022		**TLM1**	CO2	T1	
6.	Promotion, Transfers Separation, performance appraisal	01	24.05.2022		**TLM1**	CO4	T1	
7.	Job evaluation and merit rating	01	24.05.2022		**TLM2**	CO4	T1	
No. of classes required to complete UNIT-IV		07	28.05.2022		No. of classes taken:			

UNIT-V: Project management

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-V	01	28.05.2022		**TLM1**	CO5	T1	
2.	Early teclmiques in project management	01	30.05.2022		**TLM1**	CO5	T1	
3.	Network analysis: Programme evaluation and review teclmique (PERT),	01	31.05.2022		**TLM2**	CO5	T1	
4.	Critical path method (CPM), Identifying critical path	01	31.05.2022		**TLM1**	CO5	T1	
5.	Probability of completing project within given time	01	31.05.2022		**TLM1**	CO5	T1	
6.	Project cost analysis, project crashing	01	04.06.02022		**TLM3**	CO5	T1	
7.	simple problems	01	04.06.02022		TLM3	CO5	T1	
No. of classes required to complete UNIT-V		08			No. of classes taken:			

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)		

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions	21.02.2022	09.04.2022	7W
I Mid Examinations	11.04.2022	16.04.2022	1W
II Phase of Instructions	18.04.2022	04.06.2022	9W
II Mid Examinations	06.06.2022	11.06.2022	1W

Preparation and Practicals	13.06.2022	18.06.2022	1 W
Semester End Examinations	20.06.2022	02.07.2022	2W

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)

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

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

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

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.

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.

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

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.

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.

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

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

Communication: Communicate effectively on complex engineering activities withthe 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.

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 andleader in a team, to manage projects and in multidisciplinary environments.

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):

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

N.SAMBASIVA RAO	Mr U Rambabu	Dr. A ADISESHA REDDY	Dr. A ADISESHA 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, NTR DIST., A.P.-521 230.

hodcse@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 :R. Ashok
Course Name & Code :ANDROID TECHNOLOGIES LAB & 17CS63
L-T-P Structure :0-0-2 **Credits**:1
Program/Sem/Sec : B.Tech.–CSE/VI Sem/Sec-C **A.Y.** : 2021-22

1. **Prerequisite:** KnowledgeinJAVAProgramming

2. **CourseEducationalObjective(CEO):**

Thiscoursefacilitatesstudentsdevelopcompetenceandconfidenceinandroidprogrammingan dunderstandtheentireAndroidAppsDevelopmentCycle, as well as it would also enable the students to independently create newAndroidApplications.

3. **CourseOutcomes(COs):** Attheendofthecourse,thestudentwillbeableto:

CO1: DesignbasicAndroidApplications.

CO2: DevelopapplicationsthatinteractwithSQLiteDatabase.

CO3: DesignapplicationsthatmakeuseofAdvancedAndroidConcepts.

CO4: Improveindividual/teamworkskills,communication&reportwritingskillswithethicalv alues.

4. **CourseArticulationMatrix:**

Course Code	CO	PO												PSO		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
17CS63	CO1	1	2	3	1	3	-	-	-	-	-	-	2	3	-	-
	CO2	2	2	3	1	3	-	-	-	-	-	-	2	3	3	-
	CO3	1	2	3	1	3	-	-	-	-	-	-	2	3	-	-
	CO4	-	-	-	-	-	-	-	2	2	2	-	2	-	-	-
1=Slight(Low)		2=Moderate(Medium)								3=Substantial(High)						

5. Schedule:

S.No.	ProgramstobeCovered	No.ofClasses		Date	DM
		Asperthe Schedule	Taken		
1.	IntroductiontoAndroidPlatform	2		21/02/2022	5
2.	Cycle-1,2	2		28/02/2022	5
3.	Cycle-3,4	2		07/03/2022	5
4.	Cycle-5,6	2		14/03/2022	5
5.	Cycle-7,8	2		21/03/2022	5
6.	Cycle-9,10	2		28/03/2022	5
7.	Cycle-11,12	2		04/04/2022	5
8.	Cycle-13,14	2		11/04/2022	5
9.	Cycle-15,16	2		18/04/2022	5
10.	Cycle-17,18	2		25/04/2022	5
11.	Cycle-19,20	2		02/05/2022	5
12.	Cycle-21	2		09/05/2022	5
13.	Cycle-22	2		16/05/2022	5
14.	Cycle-23	2		23/05/2022	5
15.	Cycle-24,25	2		30/05/2022	5
16.	InternalExam	2		06/06/2022	5

DeliveryMethods(DM):

1.Chalk&Talk 2.ICTTools 3.Tutorial
4.Assignment/Test/Quiz 5.Laboratory/FieldVisit
6.Web basedLearning

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Mr. R. Ashok	Mr. B. Siva Rama Krishna	Dr. Y. Vijay Bhaskar Reddy	Dr. D. Veeraiah
Signature				

	LESSON PLAN	Date: 22/02/2022 To 12/06/2022
	Sub. Name :DMDW LAB **Branch: CSE:Semester& Section: VI C**	

DMDW LAB – 17CI67

Lecture : 2 Periods/week **Internal Marks :40**

External Marks : 60

Credits: 2 **External Examinations : 3 Hrs**

Course Educational Objectives:

The main objective of the course is student will be familiar with different data mining algorithms and able to learn the supervised and unsupervised techniques with various data mining tools.

Course Outcomes:

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

CO1: Understand the need of data mining and the details of different algorithms made available by popular commercial data mining software.

CO2: Solve real data mining problems by using association mining techniques with modern tools / programming.

CO3: Solve real data mining problems by using Supervised/Unsupervised mining techniques with modern tools / programming.

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

Prerequisite: DBMS, Probability and Statistics

	Lakireddy Bali Reddy College of Engineering	
	Department of CSE	
	Outcome based lesson plan	
	Academic year: 2021-2022	Course: DMDW LAB
	Programme: B.Tech	Exp No: 1 to 14
	Year & Sem: III& II (VI Sem)	Section: C

S.No	Teaching Learning Process (TLP)	Delivery Methods (DM)	Assessment Methods (AM)
1	Solving Real world problem	Chalk & Talk	Assignments
2	Explaining application before theory	ICT tools	Quiz
3	Solving problems	Group discussions	Tutorials
4	Designing of Cycles	Industrial visit	Surprise Tests
5	Problems on environmental, economics, health & safety	Field work	Mid Exams
6	Problems on professional & ethics	Case studies	Model Exam
7	Seminar	Mini Projects	QAs
8	Problems using software	Numerical treatment	
9	Self-Study	Design / Exercises	

Detailed Lesson Plan-CSec

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
1	Introduction to Weka tool	25/02/22		1	1,2	2,4,6
2	Cycle-1	04/03/22 11/03/22		1	1,2	
3	Cycle-2	18/03/22 25/03/22		1	1,2	
4	Cycle-3	01/04/22		1	1,2	
5	Cycle-4	08/04/22		1	1,2	
6	Cycle-5	15/04/22		1	1,2	
7	Cycle-6	22/04/22		1	1,2	
8	Cycle-7	29/04/22		1	1,2	
09	Cycle-8	06/05/22		1	1,2	
10	Cycle-9	13/05/22		1	1,2,7	
11	Cycle-10	20/05/22		1	1,2,7	
12	Cycle-11	27/05/22 03/05/22		1	1,2,7	
13	Internal Exam	10/06/22		1	1,2,7	

Assessment Summary:

Assessment Task	Weight age (Marks)	**Course Outcomes**			
		CO1	CO2	CO3	CO4
Day-Day Performance	20				
Viva	05				
Internal Test	10				
Attendance	5				
End Exam	60				
Total	100				

Mapping Course Outcomes with Programme Outcomes:

Course Code	Programme Outcomes															
	COs	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
17CI66	CO1	2	3	1	-	3	-	-	-	-	-	-	2	2	3	-
	CO2	2	2	3	2	3	2	-	-	-	-	-	2	2	3	-
	CO3	2	2	3	2	3	2	-	-	-	-	-	2	2	3	-
	CO4	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-

1 = Slight (Low) 2 = Moderate (Medium) 3-Substantial (High)

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G V Suresh	G V Suresh	Dr.Y. Vijay Bhasakar Reddy	Dr. D. Veeraiah
Sign with Date				

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

COMPUTER SCIENCE AND ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : Mr. B SAGAR
Course Name & Code : Presentation Skills Lab; 17FE61
L-T-P Structure : 0-0-2+2 Credit : 1
Program/Sem/Sec : B.Tech,CSE-C , VI-Sem., A.Y: 2021-22

PRE-REQUISITE: Should have fundamental knowledge in making conversations in English and be with readiness to speak

COURSE EDUCATIONAL OBJECTIVE (CEOs): To help students make oral presentations, power point presentations, participate in group discussions and write project/research/technical reports/formal letters by gathering information and organizing ideas relevantly and coherently.

COURSE OUTCOMES (COs): At the end of the course, students are able to

CO 1	Make power point presentations and oral presentations
CO 2	Use standard vocabulary contextually.
CO 3	Manage skillfully through group discussions.
CO 4	Negotiate skillfully for better placement.

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

Course		**Program Outcomes (POs)**											
	POs→	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Presentation Skills Lab 17FE61	**CO1**		1		3		2			3	3		2
	CO2		1		3		2			3	3		2
	CO3		1		3		2			3	3		2
	CO4		1		3		2			3	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 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):

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	24-02-2022		TLM4	CO1	
2.	JAM- I (prepared)	2	03-03-2022		TLM4	CO1	
3.	JAM-II (Extempore)	2	10-03-2022		TLM4	CO1	
4.	Group Discussion	2	17-03-2022		TLM4, TLM6	CO3	
5.	Group Discussion	2	24-03-2022		TLM4, TLM6	CO3	
6.	Reading Comprehension/Listening Comprehension	2	31-03-2022		TLM3	CO2	
7.	Poster Presentation	2	07-04-2022		TLM2, TLM4	CO1	
8.	Power point Presentation	2	21-04-2022		TLM2, TLM4	CO1	
9.	Vocabulary(one-word substitutes/analogy/idioms)	2	28-04-2022		TLM1, TLM3	CO2	
10.	Letter & Résumé writing	2	05-05-2022		TLM1, TLM3	CO4	
11.	Letter & Résumé writing	2	12-05-2022		TLM1, TLM3	CO4	
12.	Vocabulary(Synonyms/Antonyms)	2	19-05-2022		TLM1, TLM3	CO2	
13.	Mock Interviews	2	26-05-2022			CO4	
14.	Internal Lab Exam	2	02-06-2022				
	Total	**28**					

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	10 Marks
	Record	10 Marks
Internal Test		10 Marks
Attendance		05 Marks
Viva – Voce During Regular Lab Sessions		05 Marks
Total		**40 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:

Sl.No.		Topic	Marks
I.	i.	Synonyms	5
	ii.	Antonyms	5
	iii	One-Word substitutes	5
	iv	Idioms	2 ½
	v	Analogy	2 ½
II.		Resum`e	5
III.		Reading Comprehension	5
IV.		Oral & written task (JAM/GD/PPT)	20
V.		Interview	10
		Total	**60**

% 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

Rubrics For Evaluation of Laboratory Courses								
Day-To-Day Lab (Observation) Performance Evaluat 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)**	Languag e **(4 Marks)**	Language used is not suitable Full of incorrect vocabulary **(2 Marks)**	Some words are inapprop riately used / wrongly spelt **(3Mark s)**	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 up to the mark **(3 Marks)**	All the points are analyzed properly More content was delivered. **(4 Marks)**	Content **(4 Marks)**	Very less points were written Points were not analyzed properly **(2 Marks)**	Some of the points were missing Some points are not properly analyzed **(3 Marks)**	Complete information is provided for the topic Important information is provided with illustrations/ examples **(4 Marks)**
3	Style of Presentati on **(2 Marks)**	Inappropriate body language Improper presentation **(0 Marks)**	Presentation is not up to the mark **(1 Mark)**	Presented well with appropriat e etiquette All important conclusion s have been clearly made, student shows good understan ding of the topic. **(2 Marks)**	Gramma r& Neatness **(2 Mark)**	Frequent grammar and/r spelling errors writing style is rough and immature **(1/2 Mark)**	Some grammat ical 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	Dr.A. Rami Reddy

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)

Accredited by NAAC with'A' Grade & NBA (Under Tier - I), ISO 9001:2015 Certified Institution

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

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

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

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE HANDOUT

Part-A

PROGRAM : B.Tech.VI Semester, Computer Science Engineering (Section-C)
ACADEMIC YEAR : 2021-22
COURSE NAME & CODE : Employability Enhancement Skills-II – 17PD08
L-T-P STRUCTURE : 1 (L) – 0 (T) -0
COURSE CREDITS : NIL
COURSE INSTRUCTOR : **Mrs. Ch. Padma, Assistant Professor;**
Mrs. K. Samaikya, Assistant Professor
COURSE COORDINATOR : **Mrs. K. Samaikya, Assistant Professor**
PRE-REQUISITES : Nil

COURSE EDUCATIONAL OBJECTIVES (CEOs):

To develop language & communication skills to augment professional development

To inculcate industry-readiness skills among professional students

To familiarize students with elements of Quantitative techniques, Reasoning required for placement tests.

To acquaint the students with concepts and tools that will serve as building blocks for analytical thinking

To help students in career planning and professional development

COURSE OUTCOMES (COs)

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

CO 1	To identify, analyze and apply quantitative techniques related to qualify in Placement tests.
CO 2	To effectively utilize verbal ability & communication skills to qualify in Placement tests.
CO 3	To effectively communicate in professional as well as social contexts.
CO 4	To apply key soft skills effectively in Job Interviews as well in other professional contexts.
CO 5	Inculcate lifelong learning through personal effectiveness as well as leadership.

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	3	3				3			
CO2	3	3				3	3					3			
CO3	3		3				2					2			
CO4	3					2	3	2				3			
CO5	3	3	3	3		3	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).

SYLLABUS

UNIT – I:
Verbal Ability: Tenses& Conditional Clauses
Quantitative Aptitude: Alligation or Mixture, Simple Interest and Compound Interest

UNIT – II:
Verbal Ability: Sentence Completions
Quantitative Aptitude: Time and work, Pipes and Cistern, Permutations and Combinations, Probability

UNIT – III:
Verbal Ability: Spot the Errors
Quantitative Aptitude: Time and Distance, Problems on trains, Boats and Streams, Races and Games of Skill

UNIT – IV:
Verbal Ability: Jumbled Sentences, Cloze Tests
Quantitative Aptitude: Area, Volume and Surface Areas, Progressions

UNIT – V:
Verbal Ability: Advanced Reading Comprehension
Quantitative Aptitude: Clocks and Calendars, Cubes and Dice

BOS APPROVED TEXT BOOKS:

1. Objective Arithmetic, S. CHAND Publishers.
2. R.S.AGGARWAL, *Verbal & Non-Verbal Reasoning*, S. CHAND Publishers
3. Objective English. Edgar Thorpe, Pearson Education, New Delhi.2009
4. Sanjay Kumar, Pushpa Lata: Communication skills. Oxford, Delhi, 2012
5. Vocabulary Builder for Students of Engineering and Technology (A self – study manual for vocabulary Enhancement) Y.Saloman Raju, Maruthi Publishers

BOS APPROVED REFERENCE BOOKS:

1. Meenakshi Raman, Sangeetha: Technical Communication, Oxford University Press, 2008
2. Baron's Guide on GRE
3. Vocabulary Builder for Students of Engineering and Technology (A self – study manual for vocabulary Enhancement) Y.Saloman Raju, Maruthi Publishers
4. Dinesh Khattar, *The Pearson Guide to Quantitative Aptitude*, Pearson Education
5. M. Tyra, *Magical Book on Quicker Maths*, BSC Publishers Quantitative Aptitude by Arun Sharma

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

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 course- Tenses	1	21-02-2022		**TLM1**	CO1	T1, T2	
2.	Introduction –Alligation or Mixture	1	26-02-2022		**TLM1**	CO1	T1, T2	
3.	Tenses worksheet	1	28-02-2022		**TLM1**	CO1	T1, T2	
4.	Problems on Alligation or Mixture	1	05-03-2022		**TLM1**	CO1	T1, T2	
5.	Conditional Clauses	1	07-03-2022		**TLM1**	CO1	T1, T2	
6.	Simple Interest & Compound Interest	1	12-03-2022		**TLM1**	CO1	T1, T2	
7.	Conditional Clauses worksheet	1	14-03-2022		**TLM1**	CO1	T1, T2	
No. of classes required to complete UNIT-I:		7			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
1.	Time and Work, Pipes and Cistern	1	19-03-2022		**TLM1**	CO2	T1, T2	
2.	Sentence Completion	1	21-03-2022		**TLM1**	CO2	T1, T2	
3.	Permutations and Combinations	1	26-03-2022		**TLM1**	CO2	T1, T2	
4.	Sentence Completion worksheet	1	28-03-2022		**TLM1**	CO2	T1, T2	
5.	Worksheet	1	04-04-2022		**TLM1**	CO2	T1, T2	
6.	Probability	1	09-04-2022		**TLM1**	CO2	T1, T2	
7.	**I Mid Examinations**	6 days	11-04-2022 to 16-04-2022					
No. of classes required to complete UNIT-II:		6			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
1.	Error spotting	1	18-04-2022		**TLM1**	CO3	T1, T2	
2.	Time and Distance	1	23-04-2022		**TLM1**	CO3	T1, T2	
3.	Error spotting worksheet	1	25-04-2022		**TLM1**	CO3	T1, T2	
4.	Problems on Trains, Boats and Streams	1	30-04-2022		**TLM1**	CO3	T1, T2	
5.	Error spotting worksheet	1	02-05-2022		**TLM1**	CO3	T1, T2	
6.	Races and Games of Skill	1	07-05-2022		**TLM1**	CO3	T1, T2	
No. of classes required to complete UNIT-III		6			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
1.	Jumbled sentences	1	09-05-2022		**TLM1**	CO4	T1, T2	
2.	Area, Volumes and Surface Area	1	14-05-2022		**TLM1**	CO4	T1, T2	
3.	Jumbled sentences worksheet	1	16-05-2022		**TLM1**	CO4	T1, T2	
4.	Progressions	1	21-05-2022		**TLM1**	CO4	T1, T2	
No. of classes required to complete UNIT-IV		4			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
1.	Advanced Reading Comprehension passages	1	23-05-2022		**TLM1**	CO5	T1, T2	
2.	Clocks & Calendars	1	28-05-2022		**TLM1**	CO5	T1, T2	
3.	Advanced Reading Comprehension passages	1	30-05-2022		**TLM1**	CO5	T1, T2	
4.	Cubes and Dice	1	04-06-2022		**TLM1**	CO5	T1, T2	
5.	**II Mid Examinations**	6 days	6-6-2022 to 11-6-2022					
No. of classes required to complete UNIT-V : 4					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
1.	Advanced Topics in Unit I	1			**TLM1**	CO1	T1, T2, R1 to R5	
2.	Advanced Topics in Unit II	1			**TLM1**	CO2		
3.	Advanced Topics in Unit III	1			**TLM1**	CO3		
4.	Advanced Topics in Unit IV	1			**TLM1**	CO4		
5.	Advanced Topics in Unit V	1			**TLM1**	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

ACADEMIC CALENDAR:

Description	From	To	Weeks
Commencement of Class Work: 21-02-2022			
I Phase of Instructions	21-02-2022	09-04-2022	7 W
I Mid Examinations	11-04-2022	16-04-2022	1 W
II Phase of Instructions	18-04-2022	04-06-2022	7 W
II Mid Examinations	06-06-2022	11-06-2022	1 W
Preparation and Practical's	13-06-2022	18-06-2022	1 W
Semester End Examinations	20-06-2022	02-07-2022	2 W

Part - C

EVALUATION PROCESS: R17 Regulation

Evaluation Task	Marks
Cumulative Internal Examination (CIE) :	100
Total Marks = CIE	100

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1: Pursue higher education, entrepreneurship and research to compete at global level.
PEO2: Design and develop products innovatively in the area of computer science and engineering and in other allied fields.
PEO3: Function effectively as individuals and as members of a team in the conduct of interdisciplinary projects; and even at all the levels with ethics and necessary attitude.
PEO4: Serve ever-changing needs of the society with a pragmatic perception.

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.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

PSO1: The ability to apply Software Engineering practices and strategies in software project development using open source programming environment for the success of organization.
PSO2: The ability to design and develop computer programs in networking, web applications and IoT as per the society needs.
PSO3: To inculcate an ability to analyze, design and implement database applications.

Position	***Course Instructor***	***Course Coordinator***	***Module Coordinator***	***HOD***
Name	**K.SAMAIKYA/** **CH. PADMA**	**K.SAMAIKYA**	**Dr. SUJITH KUMAR RATH**	**Dr. SUJITH KUMAR RATH**
Signature				