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

COURSE HANDOUT
PART-A

Name of Course Instructor: Dr. S Jayaprada
Course Name & Code   : Cloud Computing & 20CS24
L-T-P Structure   : 3-0-0   **Credits:** 3
Program/ Sem /Sec   : B.Tech/VII/A   **A.Y.:** 2023-24

PREREQUISITES   : **Computer networks, and Operating Systems**

COURSE EDUCATIONAL OBJECTIVES (CEOs): The Objective of the course is to introduce the concepts of evolving computer model, cloud computing, levels of services that can be achieved by cloud. and security aspects in the cloud.

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

CO1	Illustrate the key dimensions of the challenge of Cloud Computing (**Understand – L2**)
CO2	Classify the Levels of Virtualization and mechanism of tools. (**Understand – L2**)
CO3	Analyze Cloud infrastructure including Google Cloud and Amazon Cloud. (**Analyze – L4**)
CO4	Create Combinatorial Auctions for cloud resource and design scheduling algorithms for computing cloud. (**Apply – L3**)
CO5	Assess control storage systems and cloud security, the risks involved its impact and develop cloud application (**Analyze – L4**)

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

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

TEXTBOOKS:
T1   Distributed and Cloud Computing, Kai Hwang, Geoffry C. Fox, Jack J. Dongarra MK Elsevier.(**UNIT-1,2&3**)
T2   Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier**.(UNIT-4&5)**

REFERENCE BOOKS:
R1   Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madisetti, University Press

R2   Cloud Computing, A Practical Approach, Anthony T Velte, Toby J Velte, Robert Elsenpeter, TMH

R3   Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christen vecctiola, S Tammaraiselvi, TMH

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Systems Modeling, Clustering and Virtualization

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	03.07.2023		TLM1,2	
2.	Introduction to Unit-I	1	04.07.2023		TLM1,2	
3.	**Scalable Computing over the Internet**: The Age of Internet Computing	3	05.07.2023 06.07.2023 10.07.2023		TLM1,2	
4.	**Technologies for Network Based Systems**	3	11.07.2023 to 13.07.2023		TLM1,2	
5.	**System models for Distributed and Cloud Computing**	3	15.07.2023 17.07.2023 18.07.2023		TLM1,2	
6.	**Performance, Security and Energy Efficiency**	2	19.07.2023 20.07.2023		TLM1,2	
No. of classes required to complete UNIT-I: 13				**No. of classes taken:**		

UNIT-II: Virtual Machines and Virtualization of Clusters and Data Centers

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.	**Implementation Levels of Virtualization**	2	22.07.2023 24.07.2023		TLM1,2	
2.	**Virtualization Structures/ Tools and Mechanisms,**	2	25.07.2023 26.07.2023		TLM1,2	
3.	Virtualization of CPU	1	27.07.2023		TLM1,2	
4.	Memory and I/O Devices	1	31.07.2023		TLM1,2	
5.	**Virtual Clusters and Resource Management**	3	01.08.2023 to 03.08.2023		TLM1,2	
6.	**Virtualization for Data-Center Automation.**	3	05.08.2023 07.08.2023 08.08.2023		TLM1,2	
No. of classes required to complete UNIT-II: 12				**No. of classes taken:**		

UNIT-III: Cloud Platform Architecture

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.	**Cloud Computing and Service Models**	3	09.08.2023 10.08.2023 14.08.2023		TLM1,2	
2.	**Public Cloud Platforms**	2	16.08.2023 17.08.2023		TLM1,2	

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
3.	**Service Oriented Architecture**	3	19.08.2023 21.08.2023 22.08.2023		TLM1,2	
4.	**Programming on Amazon AWS**	3	23.08.2023 24.08.2023 26.08.2023		TLM1,2	
MID EXAMINATION-I			**28.08.2023 to 02.09.2023**			
5.	**Programming on Microsoft Azure**	3	04.09.2023 05.09.2023 07.09.2023		TLM1,2	
No. of classes required to complete UNIT-III: 14					**No. of classes taken:**	

UNIT-IV: Cloud Resource Management and Scheduling

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.	**Policies and Mechanisms for Resource Management**	2	11.09.2023 12.09.2023		TLM1,2	
2.	**Applications of Control Theory to Task Scheduling on a Cloud**	1	13.09.2023		TLM1,2	
3.	**Stability of a Two-Level Resource Allocation Architecture**	1	14.09.2023		TLM1,2	
4.	**Feedback Control Based on Dynamic Thresholds**	1	16.09.2023		TLM1,2	
5.	**Coordination of Specialized Autonomic Performance Managers**	1	19.09.2023		TLM1,2	
6.	**Resource Bundling**	1	20.09.2023		TLM1,2	
7.	**Scheduling Algorithms for Computing Clouds**	1	21.09.2023		TLM1,2	
8.	**Fair Queuing**	1	23.09.2023		TLM1,2	
9.	**Start Time Fair Queuing**	1	25.09.2023		TLM1,2	
No. of classes required to complete UNIT-IV: 10					**No. of classes taken:**	

UNIT-V: Storage Systems

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.	**Evolution of storage technology**	1	26.09.2023		TLM1,2	
2.	**Storage models, file systems and database**	1	27.09.2023		TLM1,2	
3.	**Distributed file systems**	2	03.10.2023 to 04.10.2023		TLM1,2	
4.	**General parallel file systems**	2	05.10.2023 to 07.10.2023		TLM1,2	
5.	**Google file system**	2	09.10.2023 to 10.10.2023		TLM1,2	
No. of classes required to complete UNIT-V: 08					**No. of classes taken:**	
MID EXAMINATION – II			**30.10.2023 to 04.11.2023**			

CONTENT BEYOND THE SYLLABUS:

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Building and hosting a simple cloud application using Google App Engine	1	30.10.2023		TLM1,2	
2.	hosting a simple cloud application using Microsoft Azure	1	31.10.2023		TLM1,2	

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

PEVALUATION PROCESS (R20 Regulation):

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

PART-D

PROGRAMME OUTCOMES (POs):

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

PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and 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	**Ethics**: 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.
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

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	Dr. S Jayaprada	Dr. S Jayaprada	Dr D Venkata Subhaiah	Dr. D. Veeraiah
Signature				
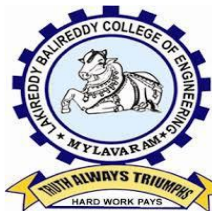
LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B. REDDY NAGAR, MYLAVARAM, NTR DIST., A.P.-521 230.
hodcse@lbrce.ac.in, cseoffice@lbrce.ac.in, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : **P.MARY KAMALA KUMARI**
Course Name & Code : Software Project Management &20CS25
L-T-P Structure : 3-0-0   Credits : 3
Program/Sem/Sec : B.Tech., CSE., VII-Sem., Sec-A   A.Y: 2023-24

PRE-REQUISITE: Software Engineering, Software Testing Methodologies, Object oriented Analysis and Design.

COURSE EDUCATIONAL OBJECTIVES (CEOs): This course is centered on unique aspects of software project management at three levels: Organizational management, Infrastructure management and project management and measurement of the Project, and how these are applied to actual software projects.

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

CO 1	Identify the process of Conventional Software Management the Evolution and Improvement of Software Economics.
CO 2	Describe the basic s/w processes, Cost estimation and improvement in s/w Economics.
CO 3	Summarize Life cycle phases and Artifacts of the process in Software project management.
CO 4	Apply Workflows and checkpoints in Iterative Process planning.
CO5	Illustrate Project Organizations, process automation building blocks and metrics in assessing Software Quality.

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	-	-	-	-	-	-	-	-	2	1	-	-	3
CO2	2	2	-	-	-	-	-	-	-	-	3	1	-	-	3
CO3	2	2	1	-	-	-	-	-	-	-	3	1	-	-	3
CO4	3	2	1	-	-	-	-	-	-	-	2	-	-	-	3
CO5	2	2	1	-	-	-	-	-	-	-	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 Walker Royce, "Software Project Management", Pearson Education, 2015.

REFERENCE BOOKS:

R1 Robert K. Wysocki, "Effective Software Project Management", Wiley Publication,2011.

R2 Walker Royce, "Software Project Management", Addison-Wesley, 1998.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Conventional Software 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.	UNIT - I: The waterfall model	2	3-7-2023 4-7-2023		TLM1, TLM2	
2.	Conventional software management performance	2	5-7-2023 7-7-2023		TLM1, TLM2	
3.	**Evolution of Software Economics:** Software Economics	1	10-07-2023 11-07-2023		TLM1, TLM2	
4.	Software cost estimation	1	12-07-2023		TLM1, TLM2	
5.	**Improving Software Economics:** Reducing Software product size	1	14-07-2023 17-07-2023		TLM1, TLM2	
6.	Improving software processes	1	18-07-2023		TLM1, TLM2	
7.	The principles of conventional software Engineering	1	19-07-2023		TLM1, TLM2	

8.	Principles of modern software management	1	21-07-2023		TLM1, TLM2	
9.	Transitioning to an iterative process.	1	22-07-2023		TLM1, TLM2	
No. of classes required to complete UNIT-I:11				No. of classes taken:		

UNIT-II: Life cycle phases

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.	Engineering and production stages	2	24-07-2023 25-07-2023		TLM1, TLM2	
2.	Inception	1	26-07-2023		TLM2	
3.	Elaboration	1	28-07-2023		TLM1, TLM2	
4.	Construction	1	31-07-2023		TLM1, TLM2	
5.	Transition phases	1	01-08-2023		TLM1, TLM2	
6.	**Artifacts of the process:** The artifact sets	1	02-08-2023		TLM1, TLM2	
7.	Management artifacts	1	05-08-2023		TLM1, TLM2	
8.	Engineering artifacts	1	07-08-2023		TLM1, TLM2	
9.	Programmatic artifacts	1	09-08-2023		TLM1, TLM2	
10.	A Management perspective and Technical perspective	1	11-08-2023		TLM1, TLM2	
No. of classes required to complete UNIT-II:11				No. of classes taken:		

UNIT-III: Workflows of the process

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.	Software process workflows	2	14-08-2023 16-08-2023		TLM1, TLM2	
2.	Iteration workflows	1	19-08-2023		TLM1, TLM2	
3.	**Check points of the process:** Major milestones	1	21-08-2023		TLM1, TLM2	
4.	Minor Milestones	1	22-08-2023		TLM1, TLM2	
5.	Periodic status assessments	1	25-08-2023		TLM1, TLM2	
I MID EXAMINATIONS FROM 28-08-2023 TO 02-09-2023						
6.	**Iterative Process Planning:** Work break down structures	1	04-09-2023		TLM1, TLM2	
7.	Planning guidelines	1	08-09-2023		TLM1, TLM2	
8.	Cost and schedule estimating	2	11-09-2023 12-09-2023		TLM1, TLM2	
9.	Iteration planning process	1	15-09-2023		TLM1, TLM2	
10.	Pragmatic planning	1	16-09-2023		TLM1, TLM2	
No. of classes required to complete UNIT-III:12				No. of classes taken:		

UNIT-IV : Project Organization sand Responsibilities

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.	Line-of-Business Organizations	1	19-09-2023		TLM1, TLM2	
2.	Project Organizations	1	20-09-2023		TLM1, TLM2	
3.	Evolution of Organizations	1	21-09-2023		TLM1, TLM2	
4.	**Process Automation:**	2	25-09-2023 26-09-2023		TLM1, TLM2	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
	Automation Building blocks					
5.	The Project Environment	1	30-09-2023		TLM1, TLM2	
6.	**Project Control and Process instrumentation:** The seven core Metrics	1	03-10-2023		TLM1, TLM2	
7.	Management indicators	1	04-10-2023		TLM1, TLM2	
8.	Quality indicators	1	06-10-2023		TLM1, TLM2	
9.	Life cycle expectations	1	07-10-2023		TLM1, TLM2	
10.	Pragmatic Software Metrics	1	09-10-2023		TLM1, TLM2	
No. of classes required to complete UNIT-IV:11				No. of classes taken:		

UNIT-V: Tailoring the Process

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.	Process discriminates	1	10-10-2023		TLM1, TLM2	
2.	**Future Software Project Management:** Modem Project Profiles.	2	11-10-2023 13-10-2023		TLM1, TLM2	
3.	Next generation Software economics	1	16-10-2023		TLM1, TLM2	
4.	modern process transitions	1	17-10-2023		TLM1, TLM2	
5.	**Case Study:** The command Center Processing and Display system-Replacement(CCPDS)	2	18-10-2023 19-10-2023		TLM1, TLM2	
6.	Revision	1	23-10-2023		TLM1, TLM2	
No. of classes required to complete UNIT-V:08				No. of classes taken:		

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

PART-C

EVALUATION PROCESS (R20 Regulations):

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

PART-D

PROGRAMME OUTCOMES (POs):

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

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor : Dr. M. Sitha Ram
Course Name & Code : BLOCKCHAIN TECHNOLOGIES (20CS29)
L-T-P Structure : 3-0-0   Credits : 3
Program/Sem/Sec : B.Tech., CSE., VII-A   A.Y: 2022-23

PRE-REQUISITE: Information Security

COURSE EDUCATIONAL OBJECTIVES (CEOs):

To understand block chain technology and Crypto currency works.

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

CO 1	Demonstrate the block chain basics, Crypto currency. (UnderstandL2)
CO 2	Compare and contrast the use of different private vs. public block chain and use cases (Understand-L2)
CO 3	Design an innovative Bit coin Block chain and scripts, Block chain Science on varies coins (Apply-L3)
CO 4	Classify Permission Block chain and use cases Hyper ledger, Corda(Analyze-L4)
CO 5	Use of Block-chain in E-Governance, Land Registration, Medical Information Systems and others (Apply-L3)

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

TEXT BOOKS:

T1: Block chain Blue print for Economy by Melanie Swan

REFERENCE BOOKS:

Block chain Basics: A Non-Technical Introduction in 25 Steps 1st Edition, by Daniel Drescher.

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	HOD Sign Weekly
1.	Introduction	2	10.07.2023 & 12.07.2023		TLM1	
2.	basic ideas behind block chain	2	13.07.2023 & 14.07.2023		TLM1	
3.	how it is changing the landscape of digitalization	2	15.07.2023 & 17.07.2023		TLM1	
4.	introduction to cryptographic concepts required	2	19.07.2023 & 20.07.2023		TLM1	
5.	Block chain or distributed trust	2	21.07.2023 & 22.07.2023		TLM1	
6.	Currency	1	24.07.2023		TLM1	
7.	Cryptocurrency	1	26.07.2023		TLM1	
8.	How a Cryptocurrency works	1	27.07.2023		TLM1	
9.	Financial services	1	28.07.2023		TLM1	
10.	Bitcoin prediction markets.	2	31.08.2023 & 02.08.2023		TLM1	
11.	Tutorial-I	1	03.08.2023		TLM1	
No. of classes required to complete UNIT-I		**17**		**No of classes taken**		

UNIT-II:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
12.	Hashing	1	04.08.2023		TLM1	
13.	public key cryptosystems	2	05.08.2023 & 07.08.2023		TLM1	
14.	private vs public block chain and use cases	1	09.08.2023		TLM1	
15.	Hash Puzzles,	1	10.08.2023		TLM1	
16.	Extensibility of Block chain concepts	2	11.08.2023 & 14.08.2023		TLM1	
17.	Digital Identity	1	16.08.2023		TLM1	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
	verification					
18.	Block chain Neutrality	2	17.08.2023 & 18.08.2023		TLM1	
19.	Digital art	1	21.08.2023		TLM1	
20.	Block chain Environment	2	23.08.2023 & 24.08.2023		TLM1	
21.	Tutorial-II	1	25.08.2023		TLM1	
No. of classes required to complete UNIT-II		**14**		**No of classes taken**		

UNIT-III:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
22.	Bitcoin Block chain and scripts	2	26.08.2023 & 28.08.2023		TLM1	
23.	Use cases of Bitcoin Blockchain scripting language in micropayment	2	30.08.2023 & 31.08.2023		TLM1	
24.	escrow etc Downside of Bit coin mining	2	01.08.2023 & 02.08.2023		TLM1	
25.	Block chain Science: Grid coin	2	04.08.2023 & 07.09.2023		TLM1	
26.	Folding coin	1	08.09.2023		TLM1	
27.	Block chain Genomics	1	11.09.2023		TLM1	
28.	Bit coin MOOCs	1	13.09.2023		TLM1	
29.	Tutorial-III	1	14.09.2023		TLM3	
No. of classes required to complete UNIT-III		**12**		**No of classes taken**		

UNIT-IV:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
30.	Ethereum continued	2	15.09.2023 & 16.09.2023		TLM1	
31.	IOTA	1	20.09.2023		TLM1	
32.	The real need for mining	1	21.09.2023		TLM2	
33.	consensus	1	22.09.2023		TLM1	
34.	Byzantine Generals Problem	1	23.09.2023		TLM2	
35.	Consensus as a distributed	2	25.09.2023 &		TLM1	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
	coordination problem		27.09.2023			
36.	Coming to private or permissioned block chains	2	29.09.2023 & 30.09.2023		TLM2	
37.	Introduction to Hyper ledger	1	04.10.2023		TLM1	
38.	Currency & Token	1	05.10.2023		TLM1	
39.	Campus coin	1	06.10.2023		TLM2	
40.	Coin drop as a strategy for Public adoption	1	07.10.2023		TLM1	
41.	Currency Multiplicity	1	09.10.2023		TLM2	
42.	Demurrage currency	1	11.10.2023		TLM1	
43.	Tutorial-IV	1	12.10.2023		**TLM3**	
No. of classes required to complete UNIT-IV		**17**		**No of classes taken**		

UNIT-V:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
44.	Technical challenges	2	13.10.2023 & 14.10.2023		TLM1	
45.	Business model challenges	2	16.10.2023 & 18.10.2023		TLM2	
46.	Scandals and Public perception	2	19.10.2023 & 20.10.2023		TLM1	
47.	Government Regulations	2	21.10.2023 & 24.10.2023		TLM2	
48.	Uses of Block chain in E-Governance	1	25.10.2023		TLM1	
49.	Land Registration	1	26.10.2023		TLM1	
50.	Medical Information Systems.	1	27.10.2023		TLM2	
51.	Tutorial – V / Quiz - V	1	28.10.2023		TLM3	
52.	Discussion about SEE paper	1	28.10.2023		TLM3	
No. of classes required to complete UNIT-V		**13**		**No of classes taken**		

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

PART-C

EVALUATION PROCESS (R20 Regulations):

Evaluation Task	Marks
Assignment-I (Unit-I , Unit-II , Unit-III)	A1=5
Assignment-II (Unit-III , Unit-IV , Unit-V)	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
Dr. M. Sitha Ram	Dr. M. Srinivasa Rao	Dr D Venkata Subbaiah	Dr.D.Veeraiah

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor   : Mr.J.V.Pavan Chand
Course Name & Code   : Utilization of Electrical Energy & 20EE83
L-T-P Structure   : 3-0-0   Credits : 3
Program/Sem/Sec   : B.Tech, CSE(A)., VII-Sem.   A.Y   : 2023-24

Pre-requisites   : --NIL
Course Educational Objective: This course enables the student to acquire knowledge on methods of Electric Heating and welding,different lighting schemes.It also introduces the concepts of Electric Drives for Industrial and traction system and also different tariff methods.

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

CO 1	Understand mechanism of electric heating and electric welding**(Understanding –L2)**
CO 2	Analyze performance of various lighting schemes(Understanding –L2)
CO 3	Analyze the performance of electric drive systems**(Understanding –L2)**
CO 4	Illustrate the different schemes of traction and its main components**(Understanding –L2)**
CO5	Understand various tariff methods and power factor improvement techniques**.(Understanding –L2)**

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

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO a	PSO b	PSO c
CO1	2	2	2												
CO2	2	2	2								2				
CO3	2	2	2												
CO4	2	2	2								2				
CO5	2	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).

TEXT BOOKS:

T1: C.L.Wadhwa "Generation, Distribution and Utilization of Electrical energy, New Age International Publishers,3rd Edition,2015.

T2: N.V.Suryanarayana "Utilization of electric power including electric drives and electric traction, New age international publishers New Delhi,2nd edition 2014.

REFERENCE BOOKS:
R1:   Art & Science of Utilization of electrical Energy, Partab, Dhanpat Rai & Co., 2004.
R2:   Utilization of Electric Energy, E. Openshaw Taylor and V. V. L. Rao,
    Universities Press, 2009.

Part - B
COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I : ELECTRIC HEATING &WELDING

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, CEO's &CO's	1	03-07-2023		TLM1	
2.	Advantages &applications of Electric heating	1	05-07-2023		TLM1	
3.	Classification of electric heating	1	06-07-2023		TLM1	
4.	Resistance heating	1	07-07-2023		TLM1	
5.	Arc heating	1	10-07-2023		TLM1	
6.	Induction heating	1	12-07-2023		TLM1	
7.	dielectric heating	1	13-07-2023		TLM1	
8.	Causes of failures of heating elemdents	1	14-07-2023		TLM1	
9.	Materials for heating elements	1	15-07-2023		TLM2	
10.	Requirement of good heating material	1	17-07-2023		TLM2	
11.	ARC Furnace	1	19-07-2023		TYLM1	
12.	Resistance welding	1	20-07-2023		TLM2	
13.	Spot welding,seam welding	1	21-07-2023		TLM1 &TLM2	
14.	,Arc welding	1	22-07-2023		TLM1 &TLM2	
15.	Comparision between AC and DC welding	1	24-07-2023		TLM1	
No. of classes required to complete UNIT-I : 15					No. of classes taken:	

UNIT-II : ILLUMINATION ENGINEERING

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
16	Introduction	1	26-07-2023		TLM1	
17	Nature of light	1	27.07.2023		TLM1	
18	Laws of illumination	1	28.07.2023		TLM1	
19	Laws of illumination	1			TLM1	

20	Lighting schemes, sources of light	1	31.07.2023		TLM1	
21	Fluorescent Lamp, CFL and LED	1	2.8.2023		TTLM2	
22	Sodium Vapor Lamp	1	3.8.2023		TLM2	
23	Neon lamps	1	4.8.2023		TLM2	
24	mercury vapor lamps	1	5.8.2023		TLM2	
25	Comparision between tungsten &fluroscent tubes	1	7.8.2023		TLM2	
26	Requirements of good lighting	1	9.8.2023		TLM1/TLM2	
27	Street lighting	1	10.8.2023		TLM1/TLM2	
28	Assignment/Quiz	1	11.8.2023		TLM1	
No. of classes required to complete UNIT-II : 12					No. of classes taken:	

UNIT-III: ELECTRIC DRIVES

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
29	Introduction	1	12.8.2023		TLM1 &TLM2	
30	Elements of drive, advantages	1	14.8.2023		TLM1 &TLM2	
31	Factors affecting selection of motor	1	16.8.2023		TLM1 &TLM2	
32	Types of loads	1	17.8.2023		TLM1 &TLM2	
33	Industrial applications	1	18.8.2023		TLM1 &TLM2	
34	Transient Characteristics of drives	1	19.8.2023		TLM1 &TLM2	
35	Steady state characteristics of drives	1	21.8.2023		TLM1 &TLM2	
36	Steady state characteristics of drives	1	23.8.2023		TLM1 &TLM2	
37	Size of the motor	1	24.8.2023		TLM1 &TLM2	
38	Size of the motor	1	25.8.2023		TLM1 &TLM2	
39	Load Equalization	1	26.8.2023		TLM1 &TLM2	
40	Load Equalization	1	4.9.2023		TLM1 &TLM2	
41	Assignment/Quiz	1	7.9.2023		TLM1 &TLM2	
No. of classes required to complete UNIT-III : 10					No. of classes taken:	

UNIT-IV : ELECTRIC TRACTION

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
	Introduction	1	8.9.2023		TLM1	
	Requirement of an ideal traction system	1	9.9.2023		TLM1	
	Supply system for electric traction	1	11.9.2023		TLM1	
42	Train movement	1	13.9.2023		TLM1	
43	mechanism of train movement	1	14.9.2023		TLM1	
44	Traction motors	1	15.9.2023		TLM1	
45	Modern trends in electric traction	1	16.9.2023		TLM1	
46	Automation in traction	1	20.9.2023		TLM1	
47	Speed time curves for different services	1	21.9.2023		TLM1	
48	Trapezoidal and quadrilateral speed time curves	1	22.9.2023		TLM1	
49	Problems on train movement	1	23.9.2023		TLM1	
50	Assignment/quiz	1	25.9.2023		TLM1	
51	Revision	1	27.9.2023		TLM1	
No. of classes required to complete UNIT-IV : 13					No. of classes taken:	

UNIT-V: TARIFF AND POWER FACTOR IMPROVEMENT

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
52	Desirable characteristics	1	29.9.2023		TLM1 &TLM2	
53	types	1	30.9.2023		TLM1 &TLM2	
54	Flat rate	1	4.10.2023		TLM1 &TLM2	
55	Block-rate	1	5.10.2023		TLM1 &TLM2	
56	KVA maximum demand	1	6.10.2023		TLM1 &TLM2	
57	Time of Day tariff	1	7.10.2023		TLM1 &TLM2	
58	Disadvantages of low power factor	1	9.10.2023		TLM1 &TLM2	
59	Advantages of improved p.f	1	11.10.2023		TLM1 &TLM2	
60	Improvement devices	1	12.10.2023		TLM1 &TLM2	

61	Power factor improvement using static capacitor	1	13.10.2023		TLM1 &TLM2	
62	Most economical power factor	1	14.10.2023		TLM1 &TLM2	
63	Location of power factor improvement devices from consumer	1	16.10.2023		TLM1 &TLM2	
64	Assignment/Quiz	1	18.10.2023		TLM3	
65	REVISION	1	19.10.2023 To 1.11.2023		TLM1	
No. of classes required to complete UNIT-V : 13					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
44	Economic aspects in utilization of electrical energy	2	3.11.2023 &4.11.2023		TLM1/ TLM2	CO5	T2,R1,R2	

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

PART-C

EVALUATION PROCESS (R20 Regulation):

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1: To develop intelligent systems with a cutting-edge combination of machine learning, analytics, and visualisation technologies.

PEO2: To adapt the new technologies and develop the solutions to real world problems with ethical practices thereby contributing to the society.

PEO3: To continue education for fulfilling their long-term goals and achieve satisfaction as successful professionals in industry, academia and research.

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	**Ethics**: 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):

Program Specific Outcomes (PSOs):

PSO1: To apply the fundamental engineering knowledge, computational principles, and methods for extracting knowledge from data to identify, formulate and solve real time problems.

PSO2: To develop multidisciplinary projects with advanced technologies and tools to address social and environmental issues.

PSO3: To provide a concrete foundation and enrich their abilities for Employment and Higher studies in Artificial Intelligence and Data science with ethical values.

Mr.J.V.Pavan Chand	Dr.A.V.G.A.Marthanda	Dr.M.S.Giridhar	Dr.J.Siva vara prasad
Course Instructor	Course Coordinator	Module coordinatorCoordinator	HOD

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor   : C.Rajamallu
Course Name & Code   **: BASIC CIVIL ENGINEERING & 17CE80**
L-T-P Structure   : 3-0-0   Credits : 3
Program/Sem/Sec   : B.Tech., CSE., VII-Sem., Sections- A-B-C-   A.Y   : 2023-24

PRE-REQUISITE: Nil

COURSE EDUCATIONAL OBJECTIVES (CEOs):. This course deals with the importance of building planning, properties and applications of various building materials, soil classification and different types of foundations, important aspects of surveying, levelling operations and identify the terminology in roadway and railway networks, principles of water resources and environmental engineering

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

CO 1	Recognize the importance of building planning for construction
CO 2	Identify appropriate building materials for construction purposes
CO 3	Distinguish the different types of soils and foundations required for specific usage
CO 4	Evaluate the basics of surveying and levelling operations for field application and categorize the important elements of roadway and railway networks
CO 5	Discriminate the importance of quantity and quality aspects of water in the society and priorities for sanitation management.

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		2	1	3
CO2				2		2	1				2		2	1	3
CO3		1	1	2		2	1				2		2	1	3
CO4		1	1	2		2	1				2		2	1	3
CO5		1	1	2	2	2	1				2		2	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   1. M.S Palanichamy "Basic Civil Engineering", Tata McGraw Hill Publishing 2000.

REFERENCE BOOKS:

R1   1. S S Bhavikatti "Basic Civil Engineering", New age International Publications, 2010

R2   C P Kaushik& S S Bhavikatti "Basic Civil Engineering ", New age International Publications 2010.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Building Planning

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.	Building Planning- Role of a Civil Engineer	1	3-07-2023		TLM2	
2.	Inter connection among specializations in Civil Engineering	1	34-07-2023		TLM2	
3.	Elements of a Building, Basic Requirements of a Building	1	5-07-20233		TLM2	
4.	Planning- Hot and dry climates	1	7-07-2023		TLM1	
5.	Hot and wet climates, Cold climatic conditions	1	10-07-2023		TLM1	
6.	Aspect and Prospect, Roominess- Grouping, Privacy, circulation	1	11-07-2023		TLM1	
7.	Sanitation and ventilation	1	12-07-2023		TLM2	
8.	Orientation, Economy, Role of Bye-laws	1	14-07-2023		TLM2	
No. of classes required to complete UNIT-I:				No. of classes taken:		

UNIT-II: Building Materials

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.	Building Materials - Classification	1	15-07-2023		TLM1	
2.	Rocks, Bricks Classification, Composition, Properties, Commercial forms, Uses	1	17-07-2023		TLM2	
3.	Timber, Ply wood Classification, Composition, Properties, Commercial forms	1	18-07-2023		TLM2	
4.	Glass, Bitumen Classification, Composition, Properties, Commercial forms,	1	19-07-2023		TLM1	

		No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
5.	Aluminium, Cement Classification, Composition, Properties, Commercial forms,	1	21-07-2023		TLM1	
6.	Steel, Concrete Classification, Composition, Properties, Commercial forms, Uses	1	22-07-2023		TLM2	
7.	Mortar Classification, Composition, Properties, Commercial forms, Uses	1	24-07-2023		TLM2	
8.	Concept of eco-friendly materials, examples	1	25-07-2023		TLM1	
No. of classes required to complete UNIT-II:				No. of classes taken:		

UNIT-III: SOIL CLASSIFICATION AND FOUNDATION

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.	Types of soils, soil classification	1	26-07-2023		TLM1	
2.	Engineering properties	1	28-07-2023		TLM1	
3.	Bearing Capacity of soil, purpose and methods of improving bearing capacity	1	31-07-2023		TLM2	
4.	Foundations – Requirements	1	1-08-2023		TLM2	
5.	Loads, Types	1	2-08-2023		TLM1	
6.	for special structures-water tanks-	1	4-08-2023		TLM2	
7.	for special structures- silos, chimneys- transmission line towers- cooling towers, telecommunication towers	1	5-08-2023		TLM1	
No. of classes required to complete UNIT-III:07				No. of classes taken:		

UNIT-IV : SURVEYING, LEVELLING & HIGHWAY NETWORK

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.	Objective of surveying– Principles, applications and uses of - chain surveying	1	7-08-2023		TLM2	
2.	theodolite, levelling, contour maps, Planimeter, EDM concept	1	8-08-2023		TLM2	
3.	linear distance and area measurement	1	9-08-2023		TLM1	
4.	Total station- GIS-Concept and applications in civil engineering.	1	10-08-2023		TLM2	
5.	CRT Classes:5-9-2022 to 17-09-2022					
6.	MID-1 Examinations:19-09-2022 to 24-09-2022					
7.	Indian highways- Basic terminology- Classification of roads - PIEV theory - Traffic signs - IRC Code provisions	1	14-08-2023		TLM1	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
8.	Indian railways –Permanent way and components of railway track	1	18-08-2023		TLM2	
9.	Gauges – Rails -Sleepers – Ballast.	1	19-08-2023		TLM2	

No. of classes required to complete UNIT-IV:07		No. of classes taken:

UNIT-V : WATER RESOURCES AND ENVIRONMENTAL ENGINEERING

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.	Objectives of water supply system-Sources of water supply-Hydrologic cycle	1	8-09-2023		TLM1	
2.	Rainfall measurement - Purpose of dams, reservoirs, intakes, infiltration galleries	1	11-09-2023		TLM1	
3.	Water demands –Water quality parameters and their impacts - Principles of water treatment	1	14-09-2023		TLM2	
4.	Objectives of water distribution systems	1	18-09-2023		TLM2	
5.	Wastewater characteristics and their impacts	1	19-09-2023		TLM1	
6.	Principles of sewage treatment	1	21-09-2023		TLM2	
7.	Disposal of sewage	1	22-09-2023		TLM2	
8.	Water quality standards for – drinking purpose,	1	23-09-2023		TLM2	
9.	irrigation, -making	1	25-09-2023		TLM1	
10.	curing of concrete	1	26-09-2023		TLM1	
11.	methods of water distribution systems	1	28-9-2023		TLM2	
12.	Sewage generation in a society	1	1-10-2023		TLM2	
13.	Revision of Unit-1	1	1-10-2023		TLM2	
14.	Revision of Unit-1	1	4-10-2023		TLM2	
15.	Revision of Unit-2	1	5-10-2023		TLM1	
16.	Revision of Unit-2	1	8-10-2023		TLM1	
17.	Revision of Unit-3	1	11-10-2023		TLM1	
18.	Revision of Unit-3	1	12-10-2023		TLM1	
19.	Revision of Unit-4	1	13-10-2023		TLM2	
20.	Revision of Unit-4	1	25-10-2023		TLM2	
21.	Revision of Unit-5	1	26-10-2023		TLM2	
22.	Revision of Unit-5	1	27.-10-2023		TLM1	

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	3-07-2023	26-08-2022	8W
I Mid Examinations	28-08-2023	2-09-2023	1W
II Phase of Instructions	4-09-2022	28-10-2023	8W
II Mid Examinations	30-10-2023	4-11-2023	1W
Preparation and Practicals	6-11-2023	11-11-2023	1W
Semester End Examinations	13-11-2023	25-11-2023	2W

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	**Ethics**: 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	Possesses necessary skill set to analyze and design various systems using analytical and software tools related to civil engineering
PSO 2	Possesses ability to plan, examine and analyse the various laboratory tests required for the professional demands
PSO 3	Possesses basic technical skills to pursue higher studies and professional practice in civil engineering domain

Course Instructor	Course Coordinator	Module Coordinator	HOD
(C.Rajamallu)	(C.Rajamallu)	(B.Narasimha Rao)	(S.Pichi 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.
Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSEHANDOUT

PART-A

Name of Course Instructor: A NAGESWARA RAO, Sr Assistant Professor

Course Name & Code	: MANAGEMENT SCIENCE FOR ENGINEERS & 20HS02	**Regulation**: R20
L-T-P Structure	: 3-0-0	**Credits:** 03
Program/Sem/Sec	: B.Tech VII Sem (CSE)/A SEC	**A.Y.:** 2023-2024

PREREQUISITE: Professional ethics and human values

COURSE EDUCATIONAL OBJECTIVES (CEOs):
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 understand the material management techniques.

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

CO 1	Understand management principles to practical situations based on the organization structures. (L2)
CO 2	Design Effective plant Layouts by using work study methods. (L2)
CO 3	Apply quality control techniques for improvement of quality and materials management. (L3)
CO 4	Develop best practices of HRM in corporate Business to raise employee productivity. (L2)
CO 5	Identify critical path and project completion time by using CPM and PERT techniques. (L3)

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	2	-	-	3	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
CO3	-	3	-	-	-	-	-	-	-	-	-	3	-	-	-
CO4	-	-	-	-	-	-	-	3	2	-	-	3	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-
1 - Low					**2 –Medium**						**3 - High**				

PSO 1	Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.
	Design and Analyze Analog and Digital Electronic Circuits or systems and Implement real

PSO 2	time applications in the field of VLSI and Embedded Systems using relevant tools.	
PSO 3	Apply the Signal processing techniques to synthesize and realize the issues related to real time applications.	

TEXTBOOKS:

T 1 Dr. A.R.Aryasri, Management Science, TMH, 10th edition, 2012

REFERENCE BOOKS:

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

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

R3 O.P. Khana, Industrial engineering and Management L.S.Srinath, PERT & CPM

PART-B

COURSE DELIVERY PLAN (LESSONPLAN):Section-A

UNIT-I:INTRODUCTION

S. No.	Topicstobecovered	No. ofClass es Required	Tentative Dateof Completion	Actual Dateof Completion	Teaching Learning Methods	HOD SignWe ekly
1.	Management-Nature and Importance	1	03-07-2023		**TLM1/TLM2**	
2.	Management functions	1	04-07-2023		**TLM1/TLM2**	
3.	Contributions of Taylor, Fayol	1	05-07-2023		**TLM1/TLM2**	
4.	Contribution of Elton Mayo	1	06-07-2023		**TLM1/TLM2**	
5.	Maslow's & Herzberg's Two Factor Theory	1	07-07-2023		**TLM1/TLM2**	
6.	Douglas McGregor	1	10-07-2023		**TLM1/TLM2**	
7.	Basic Concepts of Organization-Authority	1	11-07-2023		**TLM1/TLM2**	
8.	Responsibility Delegation of Authority	1	12-07-2023		**TLM1/TLM2**	
9.	Departmentation and Decentralization	1	13-07-2023		**TLM1/TLM2**	
10.	Span of Control	1	14-07-2023		**TLM1/TLM2**	
11.	Line, Line and Staff organizations	1	17-07-2023		**TLM1/TLM2**	
12.	Functional, Committee	1	18-07-2023		**TLM1/TLM2**	
13.	Matrix Organizations	1	19-07-2023		**TLM1/TLM2**	
14.	Management-Nature and Importance	1	20-07-2023		**TLM1/TLM2**	
15.	Management functions	1	21-07-2023		**TLM1/TLM2**	
No. of classes required to completeUNIT-I:15				**No. of classes taken:**		

.

UNIT-II: OPERATIONS MANAGEMENT

S. No.	Topicstobecovered	No. ofClasses Required	TentativeDate ofCompletion	Actual Dateof Completion	TeachingLearningMethods	HOD SignWeekly
16.	Operations Management	1	25-07-2023		TLM1/TLM2	
17.	Plant location		26-07-2023		TLM1/TLM2	
18.	Factors influencing location	1	27-07-2023		TLM1/TLM2	
19.	Principles	1	28-07-2023		TLM1/TLM2	
20.	Types of plant layouts	1	31-07-2023		TLM1/TLM2	
21.	Methods of production	1	01-08-2023		TLM1/TLM2	
22.	job, ba.tch production	1	02-08-2023		TLM1/TLM2	
23.	Mass production	1	03-08-2023		TLM1/TLM2	
24.	Work study -	1	04-08-2023		TLM1/TLM2	
25.	Basic procedure	1	07-08-2023		TLM1/TLM2	
26.	method study	1	08-08-2023		TLM1/TLM2	
27.	Work measurement	1	09-08-2023		TLM1/TLM2	
28.	problems	1	10-08-2023		TLM1/TLM2	
29.	problems	1	11-08-2023		TLM1/TLM2	
30.	problems		14-08-2023		TLM1/TLM2	
No. of classes required to completeUNIT-II:015				**No. of classes taken:**		

UNIT-III: STATISTICAL QUALITY CONTROL, MATERIALS MANAGEMENT

S. No.	Topicstobecovered	No.of Classes Required	Tentative Date ofCompletion	Actual Dateof Completion	Teaching Learning Methods	HOD SignWeekly
31.	Statistical quality control	1	07-08-2023		TLM1/TLM2	
32.	Concept of Quality & QualityControl	1	08-08-2023		TLM1/TLM2	
33.	Functions, Meaning of SQC	1	09-08-2023		TLM1/TLM2	
34.	Variables and attributes	1	10-08-2023		TLM1/TLM2	
35.	Xchart	1	11-08-2023		TLM1/TLM2	
36.	RChart	1	14-08-2023		TLM1/TLM2	
37.	CChart	1	16-08-2023		TLM1/TLM2	
38.	PChart	1	17-08-2023		TLM1/TLM2	
39.	Simple Problems	1	18-08-2023		TLM1/TLM2	
40.	Acceptance sampling	1	21-08-2023		TLM1/TLM2	
41.	Sampling plans	1	22-08-2023		TLM1/TLM2	
42.	Deming's contribution to quality	1	23-08-2023		TLM1/TLM2	
43.	Materials management	1	24-08-2023		TLM1/TLM2	

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
44.	Meaning and objectives	1	25-08-2023		**TLM1/TLM2**	
45.	Inventory control	1	04-09-2023		**TLM1/TLM2**	
46.	Need for inventory control	1	05-09-2023		**TLM1/TLM2**	
47.	Purchase procedure	1	06-09-2023		**TLM1/TLM2**	
48.	Store records	1	07-09-2023		**TLM1/TLM2**	
49.	EOQ, ABC analysis	1	08-09-2023		**TLM1/TLM2**	
50.	Stock levels	1	11-09-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-III:15				**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
51.	Concepts of HRM	1	13-09-2023		**TLM1/TLM2**	
52.	Basic functions of HR manager	1	14-09-2023		**TLM1/TLM2**	
53.	Manpower planning	1	15-09-2023		**TLM1/TLM2**	
54.	Recruitment	1	18-09-2023		**TLM1/TLM2**	
55.	Selection	1	20-09-2023		**TLM1/TLM2**	
56.	Training and development	1	21-09-2023		**TLM1/TLM2**	
57.	Placement	1	22-09-2023		**TLM1/TLM2**	
58.	Wage and salary administration	1	25-09-2023		**TLM1/TLM2**	
59.	Wage and salary administration	1	26-09-2023		**TLM1/TLM2**	
60.	Promotion	1	27-09-2023		**TLM1/TLM2**	
61.	Transfers Separation	1	28-09-2023		**TLM1/TLM2**	
62.	Performance appraisal	1	29-09-2023		**TLM1/TLM2**	
63.	Job evaluation and merit rating	1	03-10-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-IV:14				**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
64.	Introduction	1	05-10-2023		**TLM1/TLM2**	
65.	Early techniques in project management	1	06-10-2023		**TLM1/TLM2**	
66.	Network analysis	1	09-10-2023		**TLM1/TLM2**	
67.	Programme Evaluation and Review Technique(PERT)	1	10-10-2023		**TLM1/TLM2**	
68.	Problems	1	11-10-2023		**TLM1/TLM2**	
69.	Critical path method(CPM)	1	12-10-2023		**TLM1/TLM2**	

70.	Identifying critical path	1	13-10-2023		**TLM1/TLM2**	
71.	Problems	1	16-10-2023		**TLM1/TLM2**	
72.	Problems	1	17-10-2023		**TLM1/TLM2**	
73.	Probability of completing project	1	18-10-2023		**TLM1/TLM2**	
74.	Project cost analysis	1	19-10-2023		**TLM1/TLM2**	
75.	Problems	1	25-10-2023		**TLM1/TLM2**	
76.	projectcr ashing	1	26-10-2023		**TLM1/TLM2**	
77.	Simpleproblems	1	27-10-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-V:14				**No. of classes taken:**		

Teaching Learning Methods				
TLM1	Chalkand Talk	**TLM4**	Demonstration(Lab/FieldVisit)	
TLM2	PPT	**TLM5**	ICT (NPTEL/SwayamPra bha/MOOCS)	
TLM3	Tutorial	**TLM6**	GroupDiscussion/Project	

PART-C

EVALUATION PROCESS (R20Regulation):

Evaluation Task	Marks
Assignment-I(Units-I,II&UNIT-III(HalfoftheSyllabus))	A1=5
I-DescriptiveExamination (Units-I,II&UNIT-III(HalfoftheSyllabus))	M1=15
I-QuizExamination (Units-I,II&UNIT-III(HalfoftheSyllabus))	Q1=10
Assignment-II(Unit-III(RemainingHalfoftheSyllabus),IV&V)	A2=5
II-DescriptiveExamination(UNIT-III(RemainingHalfoftheSyllabus),IV&V)	M2=15
II-QuizExamination(UNIT-III(RemainingHalfoftheSyllabus),IV&V)	Q2=10
MidMarks=80%ofMax((M1+Q1+A1),(M2+Q2+A2)) +20%ofMin((M1+Q1+A1),(M2+Q2+A2))	M=30
CumulativeInternalExamination(CIE):M	30
SemesterEndExamination(SEE)	70
TotalMarks=CIE+SEE	100

PART-D

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO 1	To inculcate the investigating and adaptability skills into the students to carryout research on recent trends in Computer Science and Engineering Technology.
PEO 2	To empower the student with the qualities of effective communication, technical document writing, team work, lifelong learning attitude, and leadership needed for a successful career.
PEO 3	Enlighten the students on analyzing engineering issues in a broader perspective with ethical responsibility towards sustainable development to satisfy the societal needs.

PEO 4	Equip the students with all-round knowledge to adapt the evolving technical challenges and changing career opportunities in par with global competency.

PROGRAMMEOUTCOMES (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 analyse 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	**Ethics**: 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.

PROGRAMMESPECIFICOUTCOMES(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	**CourseInstructor**	**CourseC oordinator**	**ModuleC oordinator**	**Head of theDepartm ent**
Name of the Faculty	Mr. A NAGESWARA RAO	Mr.A.Nageswara Rao	Dr.M.B.S.Sreekara Reddy	Dr.S.PichiReddy
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING

(AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor: Mr. P. NAGABABU
Course Name & Code : Continuous Integration and Continuous Delivery using DevOps(20CSS4)
L-T-P Structure : 1-0-2   **Credits:** 2
Program/Sem/Sec : B.Tech., CSE, VII-Sem., Section – A.   **A.Y.:** 2023-24

PRE-REQUISITE: Basic knowledge of certain basic programming languages such as Java, and Python.

COURSE EDUCATIONAL OBJECTIVES (CEOs):

This course is designed to provide the core education necessary to build your DevOps vocabulary and to understand its principles and practices. With the help of key DevOps concepts and terminology, real-life case studies, examples and interactive group discussions and exercises, you will acquire a fundamental understanding of DevOps.

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

CO1	Understand the why, what, and how of DevOps adoption(**Understand – L2**)
CO2	Attain literacy on DevOps(**Apply L3**)
CO3	Align capabilities required in the team and create an automated CICD pipeline using a stack of tools(**Apply L3**)
CO4	Improve individual / teamwork skills, communication & report writing skills with ethical values.

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

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

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

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

REFERENCE BOOKS:

R1	Learning Continuous Integration with Jenkins: A beginner's guide to implementing Continuous Integration and Continuous Delivery using Jenkins - Nikhil Pathania ,Packt publication[https://www.amazon.in/Learning-Continuous-Integration-JenkinsPathania/dp/1785284835]
R2	Jenkins 2 – Up and Running: Evolve Your Deployment Pipeline for Next Generation Automation - Brent Laster, O'Reilly publication [https://www.amazon.in/Jenkins-2- Running-Brent-Laster/dp/1491979593]
R3	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fapp%2Ftoc%2Flex_auth_01 3382690411003904735_shared%2Foverview[Software Engineering and Agile software development]
R4	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fviewer%2Fhtml%2Flex_auth _0135015781949767676810467[Development & Testing with Agile: Extreme Programming]
R5	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fviewer%2Fhtml%2Flex_auth _01353898917192499226_shared[DevOps CICD]

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Module-1	3	5-7-2023		**DM5**	
2.	Module-2	3	12-7-2023		**DM5**	
3.	Module-3	3	19-7-2023 & 26-7-2023		**DM5**	
4.	Module-4	3	2-8-2023		**DM5**	
5.	Module-5	3	9-8-2023 & 16-8-2023		**DM5**	
6.	Module-6	3	23-8-2023		**DM5**	
7.	Module-7	3	30-8-2023		**DM5**	
8.	Module-8	3	13-9-2023		**DM5**	
9.	Module-9	3	20-9-2023		**DM5**	
10.	Module-10	3	27-9-2023		**DM5**	
11.	Module-11	3	4-10-2023		**DM5**	
12.	Module-12	3	11-10-2023 & 18-10-2023		**DM5**	
13.	Internal exam	3	25-10-2023			

Teaching Learning Methods			
DM1	Chalk and Talk	**DM4**	Assignment/Test/Quiz
DM2	ICT Tools	**DM5**	Laboratory/Field Visit
DM3	Tutorial	**DM6**	Web-based Learning

PART-C

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	**Ethics:** 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
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.P.Nagababu	Mr.N.Srinivasa Rao	Dr.S.Jayaprada	Dr. D. Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : Dr. M. Srinivasa Rao
Course Name & Code : BLOCKCHAIN TECHNOLOGIES (20CS29)
L-T-P Structure : 3-0-0   Credits : 3
Program/Sem/Sec : B.Tech., CSE., VII-B   A.Y: 2022-23

PRE-REQUISITE: Information Security

COURSE EDUCATIONAL OBJECTIVES (CEOs):

To understand block chain technology and Crypto currency works.

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

CO 1	Demonstrate the block chain basics, Crypto currency. (UnderstandL2)
CO 2	Compare and contrast the use of different private vs. public block chain and use cases (Understand-L2)
CO 3	Design an innovative Bit coin Block chain and scripts, Block chain Science on varies coins (Apply-L3)
CO 4	Classify Permission Block chain and use cases Hyper ledger, Corda(Analyze-L4)
CO 5	Use of Block-chain in E-Governance, Land Registration, Medical Information Systems and others (Apply-L3)

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

TEXT BOOKS:

   T1: Block chain Blue print for Economy by Melanie Swan

REFERENCE BOOKS:

   Block chain Basics: A Non-Technical Introduction in 25 Steps 1st Edition, by Daniel Drescher.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN): Section C

UNIT-I :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction	2	10.07.2023 & 11.07.2023		TLM1	
2.	basic ideas behind block chain	2	12.07.2023 & 13.07.2023		TLM2	
3.	how it is changing the landscape of digitalization	2	14.07.2023 & 17.07.2023		TLM1	
4.	introduction to cryptographic concepts required	2	18.07.2023 & 19.07.2023		TLM1	
5.	Block chain or distributed trust	2	20.07.2023 & 21.07.2023		TLM2	
6.	Currency	1	24.07.2023		TLM1	
7.	Cryptocurrency	1	25.07.2023		TLM1	
8.	How a Cryptocurrency works	1	26.07.2023		TLM1	
9.	Financial services	1	27.07.2023		TLM2	
10.	Bitcoin prediction markets.	2	28.07.2023 & 31.07.2023		TLM1	
11.	Tutorial - I	1	01.08.2023		TLM1	
No. of classes required to complete UNIT-I		**17**		No of classes taken		

UNIT-II:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
12.	Hashing	1	02.08.2023		TLM1	
13.	public key cryptosystems	2	03.08.2023 & 04.08.2023		TLM1	
14.	private vs public block chain and use cases	1	07.08.2023		TLM1	
15.	Hash Puzzles	1	08.08.2023		TLM1	
16.	Extensibility of Block chain concepts	2	09.08.2023 & 10.08.2023		TLM1	
17.	Digital Identity verification	1	11.08.2023		TLM1	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
18.	Block chain Neutrality	2	14.08.2023 & 16.08.2023		TLM1	
19.	Digital art	1	17.08.2023		TLM1	
20.	Block chain Environment	2	18.08.2023 & 21.08.2023		TLM1	
21.	Tutorial - II	1	22.08.2023		TLM3	
No. of classes required to complete UNIT-II		**14**		**No of classes taken**		

UNIT-III:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
22.	Bitcoin Block chain and scripts	2	23.08.2023 & 24.08.2023		TLM1	
23.	Use cases of Bitcoin Blockchain scripting language in micropayment	2	25.08.2023 & 28.08.2023		TLM1	
24.	escrow etc Downside of Bit coin mining	2	29.08.2023 & 30.08.2023		TLM2	
25.	Block chain Science: Grid coin	2	31.08.2023 & 01.09.2023		TLM1	
26.	Folding coin	1	04.09.2023		TLM2	
27.	Block chain Genomics	1	05.09.2023		TLM1	
28.	Bit coin MOOCs	1	07.09.2023		TLM2	
29.	Tutorial - III	1	08.09.2023		TLM3	
No. of classes required to complete UNIT-III		**12**		**No of classes taken**		

UNIT-IV:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
30.	Ethereum	2	11.09.2023 & 12.09.2023		TLM1	
31.	IOTA	1	13.09.2023		TLM1	
32.	The real need for mining	1	14.09.2023		TLM2	
33.	consensus	1	15.09.2023		TLM1	
34.	Byzantine Generals Problem	1	19.09.2023		TLM2	
35.	Consensus as a distributed coordination problem	1	20.09.2023		TLM1	

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.	Coming to private or permissioned block chains	2	21.09.2023 & 22.09.2023		TLM2	
37.	Introduction to Hyper ledger	1	25.09.2023		TLM1	
38.	Currency & Token	1	26.09.2023		TLM1	
39.	Campus coin	1	27.09.2023		TLM2	
40.	Coin drop as a strategy for Public adoption	1	29.09.2023		TLM1	
41.	Currency Multiplicity	1	03.10.2023		TLM2	
42.	Demurrage currency	1	04.10.2023		TLM1	
43.	Tutorial - IV	1	05.10.2023		TLM3	
No. of classes required to complete UNIT-IV		**16**		**No of classes taken**		

UNIT-V:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
44.	Technical challenges	2	09.10.2023 & 10.10.2023		TLM1	
45.	Business model challenges	2	11.10.2023 & 12.10.2023		TLM2	
46.	Scandals and Public perception	2	13.10.2023 & 16.10.2023		TLM1	
47.	Government Regulations	2	17.10.2023 & 18.10.2023		TLM2	
48.	Uses of Block chain in E-Governance	1	19.10.2023		TLM1	
49.	Land Registration	1	20.10.2023		TLM1	
50.	Medical Information Systems.	1	26.10.2023		TLM2	
51.	Tutorial – V / Quiz - V	1	27.10.2023		TLM3	
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 (R20 Regulations):

Evaluation Task	Marks
Assignment-I (Unit-I , Unit-II , Unit-III)	A1=5
Assignment-II (Unit-III , Unit-IV , Unit-V)	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 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. M. Srinivasa Rao	Dr. M. Srinivasa Rao	Dr D Venkata Subbaiah	Dr.D.Veeraiah

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor: Mr B SIVARAMAKRISHNA
Course Name & Code :CLOUD COMPUTING(20CS24)
L-T-P Structure : 3-0-0   **Credits:** 3
Program/Sem/Sec : B.Tech VII SemSec –B CSE   **A.Y.:** 2023-24

PREREQUISITE: Data Structures and Operating Systems

COURSE EDUCATIONAL OBJECTIVES (CEOs): The Objective of the course is to provide a foundation to understand computer networks using layered architectures. It also helps students to understand the various network models, addressing concept, routing protocols and design aspects of computer networks.

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

CO1	Illustrate the key dimensions of the challenge of Cloud Computing (Understand – L2)
CO2	Classify the Levels of Virtualization and mechanism of tools. (Understand – L2)
CO3	Analyze Cloud infrastructure including Google Cloud and Amazon Cloud. (Analyze – L4)
CO4	Create Combinatorial Auctions for cloud resource and design scheduling algorithms for computing cloud. (Apply – L3)
CO5	Assess control storage systems and cloud security, the risks involved its impact and develop cloud application (Analyze – L4)

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	-	-	-	-	-	-	-	-	-	-	-	-	3
CO2	3	2	-	-	-	-	-	-	-	-	-	-	-	-	3
CO3	3	2	1	-	-	-	-	-	-	-	-	-	-	-	3
CO4	-	2	1	-	-	-	-	-	-	-	-	-	-	-	3
CO5	2	3	1	-	-	-	-	-	-	-	-	-	-	-	3
	1 - Low				**2 –** Medium					**3 -** High					

TEXTBOOKS:
  T1   Distributed and Cloud Computing, Kai Hwang, Geoffry C. Fox, Jack J. Dongarra MK Elsevier
  T2   Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevie

REFERENCE BOOKS:
  R1   Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madisetti, University Press
  R2   Cloud Computing, A Practical Approach, Anthony T Velte, Toby J Velte, Robert Elsenpeter, TMH

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Systems **Modeling, Clustering and Virtualization**

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.	Scalable Computing over the Internet-The Age of Internet Computing	1	03,04-07-2023		1 & 2	
2.	Scalable computing over the internet	1	08-07-2023		1 & 2	
3.	Technologies for Network Based Systems	1	10,11-07-2023		1 & 2	
4.	System models for Distributed and Cloud Computing	1	13,15-07-2023		1 & 2	
5.	Performance	1	17,18-07-2023		1 & 2	
6.	Security and Energy Efficiency.	1	20,22-07-2023		1 & 2	
7.	Security and Energy Efficiency.	1	24,26-07-2023		1 & 2	
8.	Technologies for Network Based Systems	1	28,31-07-2023		1 & 2	
9.	Implementation Levels of Virtualization	1	02-08-2023		1 & 2	
10.	Virtualization Structures/ Tools and Mechanisms	1	04-08-2023		1 & 2	
No. of classes required to complete UNIT-I: 10				**No. of classes taken:**		

UNIT-II: Virtual Machines and Virtualization of Clusters and Data Centers

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.	Virtualization Structures/ Tools and Mechanisms	1	05-08-2023		1 & 2	
12.	Virtualization of CPU	1	07-08-2023		1 & 2	
13.	Virtualization of CPU	1	09-08-2023		1 & 2	
14.	Memory and I/O Devices	1	11-08-2023		1 & 2	
15.	Memory and I/O Devices	1	12-08-2023		1 & 2	
16.	Virtual Clusters and Resource Management	1	14,16-08-2023		1 & 2	
17.	Virtual Clusters and Resource Management	1	18-08-2023		1 & 2	
18.	Virtualization for Data-Center Automation	1	19-08-2023		1 & 2	
19.	Virtualization for Data-Center Automation	1	21,23-08-2023		1 & 2	
20.	Cloud Computing and Service Models	1	25-08-2023		1 & 2	
No. of classes required to complete UNIT-II: 10				**No. of classes taken:**		

UNIT-III: Cloud Platform Architecture

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
21.	Public Cloud Platforms	1	26-08-2023		1 & 2	
22.	Service Oriented Architecture	2	29,30-08-2023		1 & 2	
23.	Programming on Amazon AWS	1	04,06-09-2023		1 & 2	
24.	Microsoft Azure	1	08,09-09-2023		1 & 2	
25.	Policies and Mechanisms for Resource Management	1	20-09-2023		1 & 2	
26.	Applications of Control Theory to Task Scheduling on a Cloud	1	27-09-2023		1 & 2	
27.	Stability of a Two-Level Resource Allocation Architecture	1	29-09-2023		1 & 2	
28.	Stability of a Two-Level Resource Allocation Architecture	1	30-09-2023			
No. of classes required to complete UNIT-III: 09				**No. of classes taken:**		

UNIT-IV: Cloud Resource Management and Scheduling

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.	Feedback Control Based on Dynamic Thresholds	1	06-10-2023		1 & 2	
30.	Coordination of Specialized Autonomic Performance Managers	1	07-10-2023		1 & 2	
31.	Coordination of Specialized Autonomic Performance Managers	2	10-10-2023 11-10-2023		1 & 2	
32.	Resource Bundling, Scheduling Algorithms for Computing Clouds-Fair Queuing, Start Time Fair Queuing.	1	13-10-2023		1 & 2	
33.	Resource Bundling, Scheduling Algorithms for Computing Clouds-Fair Queuing, Start Time Fair Queuing.	2	14-10-2023 17-10-2023		1 & 2	
34.	Evolution of storage technology	1	18-10-2023		1 & 2	
35.	storage models	1	20-10-2023		1 & 2	
36.	file systems and database	1	21-10-2023		1 & 2	
No. of classes required to complete UNIT-IV: 10				**No. of classes taken:**		

UNIT-V: Storage Systems

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
37.	distributed file systems	2	25-10-2023		1 & 2	
38.	general parallel file systems	1	27-10-2023		1 & 2	
39.	Google file system	1	28-10-2023		1 & 2	
40.	EMAIL,	1	01-11-2023		1 & 2	
41.	File Transfer Protocol (FTP)	1	03-11-2023		1 & 2	
42.	WWW ,HTTP	1	04-11-2023		1 & 2	
43.	SNMP	1	07-11-2023		1 & 2	
44.	Bluetooth,	1	10-11-2023		1 & 2	
45.	Firewalls	2	11-11-2023 13-11-2023		1 & 2	
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 (R20 Regulation):

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

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations
PO 6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
PO 7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	Ethics: 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
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	**Dr. B S R Krishna**	**Dr. S. Jayaprada**		**Dr. D Veeraiah**
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222933, Fax: 08659-222931
DEPARTMENT OF COMPUTER SCIENCE &ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : P.VEERA SWAMY
Course Name & Code : Software Project Management &20CS25
L-T-P Structure : 3-0-0   Credits : 3
Program/Sem/Sec : B.Tech., CSE., VII-Sem., Sec-B   A.Y: 2023-24

PRE-REQUISITE: Software Engineering, Software Testing Methodologies, Object oriented Analysis and Design.

COURSE EDUCATIONAL OBJECTIVES (CEOs): This course is centered on unique aspects of software project management at three levels: Organizational management, Infrastructure management and project management and measurement of the Project, and how these are applied to actual software projects.

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

CO 1	Identify the process of Conventional Software Management the Evolution and Improvement of Software Economics.
CO 2	Describe the basic s/w processes, Cost estimation and improvement in s/w Economics.
CO 3	Summarize Life cycle phases and Artifacts of the process in Software project management.
CO 4	Apply Workflows and checkpoints in Iterative Process planning.
CO5	Illustrate Project Organizations, process automation building blocks and metrics in assessing Software Quality.

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	-	-	-	-	-	-	-	-	2	1	-	-	3
CO2	2	2	-	-	-	-	-	-	-	-	3	1	-	-	3
CO3	2	2	1	-	-	-	-	-	-	-	3	1	-	-	3
CO4	3	2	1	-	-	-	-	-	-	-	2	-	-	-	3
CO5	2	2	1	-	-	-	-	-	-	-	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   Walker Royce, "Software Project Management", Pearson Education, 2015.

REFERENCE BOOKS:

R1   Robert K. Wysocki, "Effective Software Project Management", Wiley Publication,2011.

R2   Walker Royce, "Software Project Management", Addison-Wesley, 1998.

<u>**PART-B**</u>

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Conventional Software 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.	UNIT - I: The waterfall model	2	03-07-2023 04-07-2023		TLM2	
2.	Conventional software management performance	2	05-07-2023 06-07-2023		TLM2	
3.	**Evolution of Software Economics:** Software Economics	1	11-07-2023		TLM2	
4.	Software cost estimation	1	12-07-2023		TLM2	
5.	**Improving Software Economics:** Reducing Software product size	1	15-07-2023		TLM2	
6.	Improving software processes	1	17-07-2023		TLM2	
7.	The principles of conventional software Engineering	1	18-07-2023		TLM2	
8.	Principles of modern software management	1	19-07-2023		TLM2	

9.	Transitioning to an iterative process.	1	20-07-2023		TLM2	
No. of classes required to complete UNIT-I:11				No. of classes taken:		

UNIT-II: Life cycle phases

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.	Engineering and production stages	2	22-07-2023 24-07-2023		TLM2	
2.	Inception	1	26-07-2023		TLM2	
3.	Elaboration	1	27-07-2023		TLM2	
4.	Construction	1	31-07-2023		TLM2	
5.	Transition phases	1	01-08-2023		TLM2	
6.	**Artifacts of the process:** The artifact sets	1	02-08-2023		TLM2	
7.	Management artifacts	1	05-08-2023		TLM2	
8.	Engineering artifacts	1	07-08-2023		TLM2	
9.	Programmatic artifacts	1	09-08-2023		TLM2	
10.	A Management perspective and Technical perspective	1	10-08-2023		TLM2	
No. of classes required to complete UNIT-II:11				No. of classes taken:		

UNIT-III: Workflows of the process

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.	Software process workflows	2	14-08-2023 16-08-2023		TLM2	
2.	Iteration workflows	1	19-08-2023		TLM2	
3.	**Check points of the process:** Major milestones	1	21-08-2023		TLM2	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
4.	Minor Milestones	1	22-08-2023		TLM2	
5.	Periodic status assessments	1	24-08-2023		TLM2	
I MID EXAMINATIONS FROM 28-08-2023 TO 02-09-2023						
6.	**Iterative Process Planning:** Work break down structures	1	04-09-2023		TLM2	
7.	Planning guidelines	1	06-09-2023		TLM2	
8.	Cost and schedule estimating	2	11-09-2023 12-09-2023		TLM2	
9.	Iteration planning process	1	14-09-2023		TLM2	
10.	Pragmatic planning	1	16-09-2023		TLM2	
No. of classes required to complete UNIT-III:12				No. of classes taken:		

UNIT-IV : Project Organization sand Responsibilities

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.	Line-of-Business Organizations	1	18-09-2023		TLM2	
2.	Project Organizations	1	20-09-2023		TLM2	
3.	Evolution of Organizations	1	21-09-2023		TLM2	
4.	**Process Automation:** Automation Building blocks	2	25-09-2023 26-09-2023		TLM2	
5.	The Project Environment	1	30-09-2023		TLM2	
6.	**Project Control and Process instrumentation:** The seven core Metrics	1	03-10-2023		TLM2	
7.	Management indicators	1	04-10-2023		TLM2	
8.	Quality indicators	1	05-10-2023		TLM2	
9.	Life cycle expectations	1	07-10-2023		TLM2	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
10.	Pragmatic Software Metrics	1	09-10-2023		TLM2	

No. of classes required to complete UNIT-IV:11	No. of classes taken:

UNIT-V: Tailoring the Process

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.	Process discriminates	1	10-10-2023		TLM2	
2.	**Future Software Project Management:** Modem Project Profiles.	2	11-10-2023 12-10-2023		TLM2	
3.	Next generation Software economics	1	16-10-2023		TLM2	
4.	modern process transitions	1	17-10-2023		TLM2	
5.	**Case Study:** The command Center Processing and Display system-Replacement(CCPDS)	2	18-10-2023 19-10-2023		TLM2	
6.	Revision	1	23-10-2023		TLM2	

No. of classes required to complete UNIT-V:08	No. of classes taken:
II MID EXAMINATIONS 30-10-2023 TO 04-11-2023	

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

PART-C

EVALUATION PROCESS (R20 Regulations):

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

II-Quiz Examination(UNIT-III(Remaining Half of the Syllabus),IV&V)	Q2=10
MidMarks=80%ofMax((M1+Q1+A1),(M2+Q2+A2))+20%ofMin((M1+Q1+A1),(M2+Q2+A2))	M=30
Cumulative Internal Examination(CIE):M	30
Semester End Examination(SEE)	70
Total Marks =CIE +SEE	100

PART-D

PROGRAMME OUTCOMES (POs):

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

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : C.Rajamallu
Course Name & Code : **BASIC CIVIL ENGINEERING & 17CE80**
L-T-P Structure : 3-0-0   Credits : 3
Program/Sem/Sec : B.Tech., CSE., VII-Sem., Sections- A-B-C-   A.Y   : 2023-24

PRE-REQUISITE: Nil

COURSE EDUCATIONAL OBJECTIVES (CEOs):. This course deals with the importance of building planning, properties and applications of various building materials, soil classification and different types of foundations, important aspects of surveying, levelling operations and identify the terminology in roadway and railway networks, principles of water resources and environmental engineering

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

CO 1	Recognize the importance of building planning for construction
CO 2	Identify appropriate building materials for construction purposes
CO 3	Distinguish the different types of soils and foundations required for specific usage
CO 4	Evaluate the basics of surveying and levelling operations for field application and categorize the important elements of roadway and railway networks
CO 5	Discriminate the importance of quantity and quality aspects of water in the society and priorities for sanitation management.

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		2	1	3
CO2				2		2	1				2		2	1	3
CO3		1	1	2		2	1				2		2	1	3
CO4		1	1	2		2	1				2		2	1	3
CO5		1	1	2	2	2	1				2		2	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 1. M.S Palanichamy "Basic Civil Engineering", Tata McGraw Hill Publishing 2000.

REFERENCE BOOKS:

R1 1. S S Bhavikatti "Basic Civil Engineering", New age International Publications, 2010

R2 C P Kaushik& S S Bhavikatti "Basic Civil Engineering ", New age International Publications 2010.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Building Planning

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.	Building Planning- Role of a Civil Engineer	1	3-07-2023		TLM2	
2.	Inter connection among specializations in Civil Engineering	1	34-07-2023		TLM2	
3.	Elements of a Building, Basic Requirements of a Building	1	5-07-20233		TLM2	
4.	Planning- Hot and dry climates	1	7-07-2023		TLM1	
5.	Hot and wet climates, Cold climatic conditions	1	10-07-2023		TLM1	
6.	Aspect and Prospect, Roominess- Grouping, Privacy, circulation	1	11-07-2023		TLM1	
7.	Sanitation and ventilation	1	12-07-2023		TLM2	
8.	Orientation, Economy, Role of Bye-laws	1	14-07-2023		TLM2	
No. of classes required to complete UNIT-I:				No. of classes taken:		

UNIT-II: Building Materials

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.	Building Materials - Classification	1	15-07-2023		TLM1	
2.	Rocks, Bricks Classification, Composition, Properties, Commercial forms, Uses	1	17-07-2023		TLM2	
3.	Timber, Ply wood Classification, Composition, Properties, Commercial forms	1	18-07-2023		TLM2	
4.	Glass, Bitumen Classification, Composition, Properties, Commercial forms,	1	19-07-2023		TLM1	

5.	Aluminium, Cement Classification, Composition, Properties, Commercial forms,	1	21-07-2023		TLM1	
6.	Steel, Concrete Classification, Composition, Properties, Commercial forms, Uses	1	22-07-2023		TLM2	
7.	Mortar Classification, Composition, Properties, Commercial forms, Uses	1	24-07-2023		TLM2	
8.	Concept of eco-friendly materials, examples	1	25-07-2023		TLM1	
No. of classes required to complete UNIT-II:				No. of classes taken:		

UNIT-III: SOIL CLASSIFICATION AND FOUNDATION

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.	Types of soils, soil classification	1	26-07-2023		TLM1	
2.	Engineering properties	1	28-07-2023		TLM1	
3.	Bearing Capacity of soil, purpose and methods of improving bearing capacity	1	31-07-2023		TLM2	
4.	Foundations – Requirements	1	1-08-2023		TLM2	
5.	Loads, Types	1	2-08-2023		TLM1	
6.	for special structures-water tanks-	1	4-08-2023		TLM2	
7.	for special structures- silos, chimneys- transmission line towers- cooling towers, telecommunication towers	1	5-08-2023		TLM1	
No. of classes required to complete UNIT-III:07				No. of classes taken:		

UNIT-IV : SURVEYING, LEVELLING & HIGHWAY NETWORK

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.	Objective of surveying– Principles, applications and uses of - chain surveying	1	7-08-2023		TLM2	
2.	theodolite, levelling, contour maps, Planimeter, EDM concept	1	8-08-2023		TLM2	
3.	linear distance and area measurement	1	9-08-2023		TLM1	
4.	Total station- GIS-Concept and applications in civil engineering.	1	10-08-2023		TLM2	
5.	CRT Classes:5-9-2022 to 17-09-2022					
6.	MID-1 Examinations:19-09-2022 to 24-09-2022					
7.	Indian highways- Basic terminology- Classification of roads - PIEV theory - Traffic signs - IRC Code provisions	1	14-08-2023		TLM1	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
8.	Indian railways –Permanent way and components of railway track	1	18-08-2023		TLM2	
9.	Gauges – Rails -Sleepers – Ballast.	1	19-08-2023		TLM2	

| No. of classes required to complete UNIT-IV:07 | | | | No. of classes taken: | | |

UNIT-V : WATER RESOURCES AND ENVIRONMENTAL ENGINEERING

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.	Objectives of water supply system-Sources of water supply-Hydrologic cycle	1	8-09-2023		TLM1	
2.	Rainfall measurement - Purpose of dams, reservoirs, intakes, infiltration galleries	1	11-09-2023		TLM1	
3.	Water demands –Water quality parameters and their impacts - Principles of water treatment	1	14-09-2023		TLM2	
4.	Objectives of water distribution systems	1	18-09-2023		TLM2	
5.	Wastewater characteristics and their impacts	1	19-09-2023		TLM1	
6.	Principles of sewage treatment	1	21-09-2023		TLM2	
7.	Disposal of sewage	1	22-09-2023		TLM2	
8.	Water quality standards for – drinking purpose,	1	23-09-2023		TLM2	
9.	irrigation, -making	1	25-09-2023		TLM1	
10.	curing of concrete	1	26-09-2023		TLM1	
11.	methods of water distribution systems	1	28-9-2023		TLM2	
12.	Sewage generation in a society	1	1-10-2023		TLM2	
13.	Revision of Unit-1	1	1-10-2023		TLM2	
14.	Revision of Unit-1	1	4-10-2023		TLM2	
15.	Revision of Unit-2	1	5-10-2023		TLM1	
16.	Revision of Unit-2	1	8-10-2023		TLM1	
17.	Revision of Unit-3	1	11-10-2023		TLM1	
18.	Revision of Unit-3	1	12-10-2023		TLM1	
19.	Revision of Unit-4	1	13-10-2023		TLM2	
20.	Revision of Unit-4	1	25-10-2023		TLM2	
21.	Revision of Unit-5	1	26-10-2023		TLM2	
22.	Revision of Unit-5	1	27.-10-2023		TLM1	

| 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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	3-07-2023	26-08-2022	8W
I Mid Examinations	28-08-2023	2-09-2023	1W
II Phase of Instructions	4-09-2022	28-10-2023	8W
II Mid Examinations	30-10-2023	4-11-2023	1W
Preparation and Practicals	6-11-2023	11-11-2023	1W
Semester End Examinations	13-11-2023	25-11-2023	2W

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	Possesses necessary skill set to analyze and design various systems using analytical and software tools related to civil engineering
PSO 2	Possesses ability to plan, examine and analyse the various laboratory tests required for the professional demands
PSO 3	Possesses basic technical skills to pursue higher studies and professional practice in civil engineering domain

Course Instructor	Course Coordinator	Module Coordinator	HOD
(C.Rajamallu)	(C.Rajamallu)	(B.Narasimha Rao)	(S.Pichi 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.
Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor: Mr.K.Narayana, Sr. Assistant Professor

Course Name & Code	: MANAGEMENT SCIENCE FOR ENGINEERS & 20HS02	**Regulation**: R20
L-T-P Structure	: 3-0-0	**Credits:** 03
Program/Sem/Sec	: B.Tech VII Sem (B)	**A.Y.:** 2023-2024

PREREQUISITE: Professional ethics and human values

COURSE EDUCATIONAL OBJECTIVES (CEOs):
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 understand thematerial management techniques.

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

CO1	Understand management principles to practical situations based on the organization structures. (L2)
CO2	Design Effective plant Layouts by using work study methods. (L2)
CO3	Apply quality control techniques for improvement of quality and materials management. (L3)
CO4	Develop best practices of HRM in corporate Business to raise employee productivity. (L2)
CO5	Identify critical path and project completion time by using CPM and PERT techniques. (L3)

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	2	-	-	3	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
CO3	-	3	-	-	-	-	-	-	-	-	-	3	-	-	-
CO4	-	-	-	-	-	-	-	3	2	-	-	3	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-
	1 - Low					**2 –**Medium					**3 -** High				

PSO 1	Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.
PSO 2	Design and Analyze Analog and Digital Electronic Circuits or systems and Implement real time applications in the field of VLSI and Embedded Systems using relevant tools.
PSO 3	Apply the Signal processing techniques to synthesize and realize the issues related to real time applications.

TEXTBOOKS:

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

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

PART-B

COURSE DELIVERY PLAN (LESSON PLAN): Section - A

UNIT-I: 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.	Management-Nature and Importance	1	03-07-2023		**TLM1/TLM2**	
2.	Management functions	1	04-07-2023		**TLM1/TLM2**	
3.	Contributions of Taylor, Fayol	1	05-07-2023		**TLM1/TLM2**	
4.	Contribution of Elton Mayo	1	06-07-2023		**TLM1/TLM2**	
5.	Maslow's & Herzberg's Two Factor Theory	1	08-07-2023		**TLM1/TLM2**	
6.	Douglas McGregor	1	10-07-2023		**TLM1/TLM2**	
7.	Basic Concepts of Organization-Authority	1	11-07-2023		**TLM1/TLM2**	
8.	Responsibility Delegation of Authority	1	12-07-2023		**TLM1/TLM2**	
9.	Departmentation and Decentralization	1	13-07-2023		**TLM1/TLM2**	
10.	Span of Control	1	17-07-2023		**TLM1/TLM2**	
11.	Line, Line and Staff organizations	1	18-07-2023		**TLM1/TLM2**	
12.	Functional, Committee	1	19-07-2023		**TLM1/TLM2**	
13.	Matrix Organizations	1	20-07-2023		**TLM1/TLM2**	
14.	Quiz-I	1	22-07-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-I: 14				**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
15.	Plant location	1	24-07-2023		**TLM1/TLM2**	
16.	Factors influencing location	1	25-07-2023		**TLM1/TLM2**	
17.	Principles	1	26-07-2023		**TLM1/TLM2**	
18.	Types of plant layouts	1	27-07-2023		**TLM1/TLM2**	
19.	Methods of production (job, batch production)	1	31-07-2023		**TLM1/TLM2**	
20.	Mass production	1	01-08-2023		**TLM1/TLM2**	
21.	Work study - Basic procedure involved in method study and Work measurement	1	02-08-2023		**TLM1/TLM2**	
22.	Work study - Basic procedure involved in method study and Work measurement	1	03-08-2023		**TLM1/TLM2**	

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
23.	Quiz-II	1	05-08-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-II: 09				**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
24.	Statistical quality control Introduction	1	07-08-2023		**TLM1/TLM2**	
25.	Concept of Quality & Quality Control	1	08-08-2023		**TLM1/TLM2**	
26.	Functions, Meaning of SQC	1	09-08-2023		**TLM1/TLM2**	
27.	Variables and attributes	1	10-08-2023		**TLM1/TLM2**	
28.	X chart	1	12-08-2023		**TLM1/TLM2**	
29.	R Chart	1	10-08-2023		**TLM1/TLM2**	
30.	C Chart	1	14-08-2023		**TLM1/TLM2**	
31.	P Chart	1	17-08-2023		**TLM1/TLM2**	
32.	Simple Problems	1	19-08-2023		**TLM1/TLM2**	
33.	Acceptance sampling	1	21-08-2023		**TLM1/TLM2**	
34.	Sampling plans	1	22-08-2023		**TLM1/TLM2**	
35.	Deming's contribution to quality	1	23-08-2023		**TLM1/TLM2**	
36.	Materials management	1	24-08-2023		**TLM1/TLM2**	
37.	Meaning and objectives	1	26-08-2023		**TLM1/TLM2**	
38.	Inventory control	1	04-09-2023		**TLM1/TLM2**	
39.	Need for inventory control	1	07-09-2023		**TLM1/TLM2**	
40.	Purchase procedure	1	09-09-2023		**TLM1/TLM2**	
41.	Store records	1	11-09-2023		**TLM1/TLM2**	
42.	EOQ, ABC analysis	1	12-09-2023		**TLM1/TLM2**	
43.	Stock levels	1	13-09-2023		**TLM1/TLM2**	
44.	Quiz-3	1	14-09-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-III: 15				**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
45.	Concepts of HRM	1	16-09-2023		**TLM1/TLM2**	
46.	Basic functions of HR manager	1	19-09-2023		**TLM1/TLM2**	
47.	Man power planning	1	20-09-2023		**TLM1/TLM2**	
48.	Recruitment	1	21-09-2023		**TLM1/TLM2**	
49.	Selection	1	23-09-2023		**TLM1/TLM2**	

50.	Training and development	1	25-09-2023		**TLM1/TLM2**	
51.	Placement	1	26-09-2023		**TLM1/TLM2**	
52.	Wage and salary administration	1	27-09-2023		**TLM1/TLM2**	
53.	Wage and salary administration	1	30-09-2023		**TLM1/TLM2**	
54.	Promotion	1	03-10-2023		**TLM1/TLM2**	
55.	Transfers Separation	1	04-10-2023		**TLM1/TLM2**	
56.	Performance appraisal	1	05-10-2023		**TLM1/TLM2**	
57.	Job evaluation and merit rating	1	07-10-2023		**TLM1/TLM2**	
58.	Quiz-4	1	09-10-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-IV: 14				**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
59.	Introduction	1	10-10-2023		**TLM1/TLM2**	
60.	Early techniques in project management	1	11-10-2023		**TLM1/TLM2**	
61.	Network analysis	1	12-10-2023		**TLM1/TLM2**	
62.	Programme Evaluation and Review Technique (PERT)	1	14-10-2023		**TLM1/TLM2**	
63.	Problems	1	16-10-2023		**TLM1/TLM2**	
64.	Critical path method (CPM)	1	17-10-2023		**TLM1/TLM2**	
65.	Identifying critical path	1	18-10-2023		**TLM1/TLM2**	
66.	Problems	1	19-10-2023		**TLM1/TLM2**	
67.	Problems	1	21-10-2023		**TLM1/TLM2**	
68.	Probability of completing project within given time	1	24-10-2023		**TLM1/TLM2**	
69.	Project cost analysis	1	25-10-2023		**TLM1/TLM2**	
70.	Problems	1	26-10-2023		**TLM1/TLM2**	
71	project crashing	1	28-10-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-V: 13				**No. of classes taken:**		

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

PART-C

EVALUATION PROCESS (R20 Regulation):

Evaluation Task	Marks
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II & UNIT-III (Half of the Syllabus))	M1=15

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

PART-D

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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 analyse 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	**Ethics**: 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.

	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 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	Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.
PSO 2	Design and Analyze Analog and Digital Electronic Circuits or systems and Implement real time applications in the field of VLSI and Embedded Systems using relevant tools.
PSO 3	Apply the Signal processing techniques to synthesize and realize the issues related to real time applications.

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	Mr. K Narayana	Mr. A.Nageswara Rao	Dr.M.B.S.Sreekara Reddy	Dr.S.Pichi Reddy
Signature				

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor   :   Mr.J.V.Pavan Chand
Course Name & Code   : Utilization of Electrical Energy & 20EE83
L-T-P Structure   : 3-0-0   Credits : 3
Program/Sem/Sec   : B.Tech, CSE(B)., VII-Sem.   A.Y   : 2023-24

Pre-requisites   : --NIL

Course Educational Objective: This course enables the student to acquire knowledge on methods of Electric Heating and welding,different lighting schemes.It also introduces the concepts of Electric Drives for Industrial and traction system and also different tariff methods.

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

CO 1	Understand mechanism of electric heating and electric welding**(Understanding –L2)**
CO 2	Analyze performance of various lighting schemes(Understanding –L2)
CO 3	Analyze the performance of electric drive systems**(Understanding –L2)**
CO 4	Illustrate the different schemes of traction and its main components**(Understanding –L2)**
CO5	Understand various tariff methods and power factor improvement techniques**.(Understanding –L2)**

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

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO a	PSO b	PSO c
CO1	2	2	2												
CO2	2	2	2								2				
CO3	2	2	2												
CO4	2	2	2								2				
CO5	2	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).

TEXT BOOKS:

T1: C.L.Wadhwa "Generation, Distribution and Utilization of Electrical energy, New Age International Publishers,3rd Edition,2015.

T2: N.V.Suryanarayana "Utilization of electric power including electric drives and electric traction, New age international publishers New Delhi,2nd edition 2014.

REFERENCE BOOKS:
R1:   Art & Science of Utilization of electrical Energy, Partab, Dhanpat Rai & Co., 2004.
R2:   Utilization of Electric Energy, E. Openshaw Taylor and V. V. L. Rao,
     Universities Press, 2009.

Part - B
COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I : ELECTRIC HEATING &WELDING

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, CEO's &CO's	1	03-07-2023		TLM1	
2.	Advantages &applications of Electric heating	1	04-07-2023		TLM1	
3.	Classification of electric heating	1	05-07-2023		TLM1	
4.	Resistance heating	1	06-07-2023		TLM1	
5.	Arc heating	1	07-07-2023		TLM1	
6.	Induction heating	1	10-07-2023		TLM1	
7.	dielectric heating	1	11-07-2023		TLM1	
8.	Causes of failures of heating elemdents	1	12-07-2023		TLM1	
9.	Materials for heating elements	1	13-07-2023		TLM2	
10.	Requirement of good heating material	1	14-07-2023		TLM2	
11.	ARC Furnace	1	17-07-2023		TYLM1	
12.	Resistance welding	1	18-07-2023		TLM2	
13.	Spot welding,seam welding	1	19-07-2023		TLM1 &TLM2	
14.	,Arc welding	1	20-07-2023		TLM1 &TLM2	
15.	Comparision between AC and DC welding	1	21-07-2023		TLM1	
No. of classes required to complete UNIT-I : 15					No. of classes taken:	

UNIT-II : ILLUMINATION ENGINEERING

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
16	Introduction	1	24-07-2023		TLM1	
17	Nature of light	1	25-07-2023		TLM1	
18	Laws of illumination	1	26-07-2023		TLM1	
19	Laws of illumination	1	27.07.2023		TLM1	

20	Lighting schemes, sources of light	1	28.07.2023		TLM1	
21	Fluorescent Lamp, CFL and LED	1	31.07.2023		TTLM2	
22	Sodium Vapor Lamp	1	1.8.2023		TLM2	
23	Neon lamps	1	2.8.2023		TLM2	
24	mercury vapor lamps	1	3.8.2023		TLM2	
25	Comparision between tungsten &fluroscent tubes	1	4.8.2023		TLM2	
26	Requirements of good lighting	1	7.8.2023		TLM1/TLM2	
27	Street lighting	1	8.8.2023		TLM1/TLM2	
28	Assignment/Quiz	1	9.8.2023		TLM1	
No. of classes required to complete UNIT-II : 12					No. of classes taken:	

UNIT-III: ELECTRIC DRIVES

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
29	Introduction	1	10.8.2023		TLM1 &TLM2	
30	Elements of drive, advantages	1	11.8.2023		TLM1 &TLM2	
31	Factors affecting selection of motor	1	14.8.2023		TLM1 &TLM2	
32	Types of loads	1	16.8.2023		TLM1 &TLM2	
33	Industrial applications	1	17.8.2023		TLM1 &TLM2	
34	Transient Characteristics of drives	1	18.8.2023		TLM1 &TLM2	
35	Steady state characteristics of drives	1	21.8.2023		TLM1 &TLM2	
36	Steady state characteristics of drives	1	23.8.2023		TLM1 &TLM2	
37	Size of the motor	1	24.8.2023		TLM1 &TLM2	
38	Size of the motor	1	25.8.2023		TLM1 &TLM2	
39	Load Equalization	1	22.8.2023		TLM1 &TLM2	
40	Load Equalization	1	4.9.2023		TLM1 &TLM2	
41	Assignment/Quiz	1	5.9.2023		TLM1 &TLM2	
No. of classes required to complete UNIT-III : 10					No. of classes taken:	

UNIT-IV : ELECTRIC TRACTION

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
	Introduction	1	7.9.2023		TLM1	
	Requirement of an ideal traction system	1	8.9.2023		TLM1	
	Supply system for electric traction	1	11.9.2023		TLM1	
42	Train movement	1	12.9.2023		TLM1	
43	mechanism of train movement		13.9.2023		TLM1	
44	Traction motors	1	14.9.2023		TLM1	
45	Modern trends in electric traction	2	15.9.2023		TLM1	
46	Automation in traction	1	19.9.2023		TLM1	
47	Speed time curves for different services	1	20.9.2023		TLM1	
48	Trapezoidal and quadrilateral speed time curves	1	21.9.2023		TLM1	
49	Problems on train movement	1	22.9.2023		TLM1	
50	Assignment/quiz	1	25.9.2023		TLM1	
51	Revision	1	26.9.2023		TLM1	
No. of classes required to complete UNIT-IV : 13					No. of classes taken:	

UNIT-V: TARIFF AND POWER FACTOR IMPROVEMENT

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
52	Desirable characteristics	1	27.9.2023		TLM1 &TLM2	
53	types	1	29.9.2023		TLM1 &TLM2	
54	Flat rate	1	3.10.2023		TLM1 &TLM2	
55	Block-rate	1	4.10.2023		TLM1 &TLM2	
56	KVA maximum demand	1	5.10.2023		TLM1 &TLM2	
57	Time of Day tariff	1	6.10.2023		TLM1 &TLM2	
58	Disadvantages of low power factor	1	9.10.2023		TLM1 &TLM2	
59	Advantages of improved p.f	1	10.10.2023		TLM1 &TLM2	
60	Improvement devices	1	11.10.2023		TLM1 &TLM2	

61	Power factor improvement using static capacitor	1	12.10.2023		TLM1 &TLM2	
62	Most economical power factor	1	13.10.2023		TLM1 &TLM2	
63	Location of power factor improvement devices from consumer	1	16.10.2023		TLM1 &TLM2	
64	Assignment/Quiz	1	17.10.2023		TLM3	
65	REVISION	1	18.10.2023 To 1.11.2023		TLM1	
No. of classes required to complete UNIT-V : 13					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
44	Economic aspects in utilization of electrical energy	2	3.11.2023 &4.11.2023		TLM1/ TLM2	CO5	T2,R1,R2	

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

PART-C

EVALUATION PROCESS (R20 Regulation):

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1: To develop intelligent systems with a cutting-edge combination of machine learning, analytics, and visualisation technologies.

PEO2: To adapt the new technologies and develop the solutions to real world problems with ethical practices thereby contributing to the society.

PEO3: To continue education for fulfilling their long-term goals and achieve satisfaction as successful professionals in industry, academia and research.

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	**Ethics**: 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):

Program Specific Outcomes (PSOs):

PSO1: To apply the fundamental engineering knowledge, computational principles, and methods for extracting knowledge from data to identify, formulate and solve real time problems.

PSO2: To develop multidisciplinary projects with advanced technologies and tools to address social and environmental issues.

PSO3: To provide a concrete foundation and enrich their abilities for Employment and Higher studies in Artificial Intelligence and Data science with ethical values.

Mr.J.V.Pavan Chand	Dr.A.V.G.A.Marthanda	Dr.M.S.Giridhar	Dr.J.Siva vara prasad
Course Instructor	Course Coordinator	Module coordinatorCoordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor: S. Srinivasa Reddy
Course Name & Code : Continuous Integration and Continuous Delivery using DevOps(20CSS4)
L-T-P Structure : 1-0-2   **Credits:** 2
Program/Sem/Sec : B.Tech., CSE, VII-Sem., Section – B.   **A.Y.:** 2023-24

PRE-REQUISITE: **Basic knowledge of certain basic programming languages such as Java, and Python.**

COURSE EDUCATIONAL OBJECTIVES (CEOs):

This course is designed to provide the core education necessary to build your DevOps vocabulary and to understand its principles and practices. With the help of key DevOps concepts and terminology, real-life case studies, examples and interactive group discussions and exercises, you will acquire a fundamental understanding of DevOps.

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

CO1	Understand the why, what, and how of DevOps adoption(**Understand – L2**)
CO2	Attain literacy on DevOps(**Apply L3**)
CO3	Align capabilities required in the team and create an automated CICD pipeline using a stack of tools(**Apply L3**)
CO4	Improve individual / teamwork skills, communication & report writing skills with ethical values.

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

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

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

1- Low   **2 –**Medium   **3-** High

REFERENCE BOOKS:

R1	Learning Continuous Integration with Jenkins: A beginner's guide to implementing Continuous Integration and Continuous Delivery using Jenkins - Nikhil Pathania ,Packt publication[https://www.amazon.in/Learning-Continuous-Integration-JenkinsPathania/dp/1785284835]
R2	Jenkins 2 – Up and Running: Evolve Your Deployment Pipeline for Next Generation Automation - Brent Laster, O'Reilly publication [https://www.amazon.in/Jenkins-2- Running-Brent-Laster/dp/1491979593]
R3	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fapp%2Ftoc%2Flex_auth_01 3382690411003904735_shared%2Foverview[Software Engineering and Agile software development]
R4	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fviewer%2Fhtml%2Flex_auth _01350157819497676810467[Development & Testing with Agile: Extreme Programming]
R5	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fviewer%2Fhtml%2Flex_auth _01353898917192499226_shared[DevOps CICD]

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Module-1	3	7-7-2023		**DM5**	
2.	Module-2	3	14-7-2023		**DM5**	
3.	Module-3	3	21-7-2023 & 28-7-2023		**DM5**	
4.	Module-4	3	4-8-2023		**DM5**	
5.	Module-5	3	11-8-2023 & 18-8-2023		**DM5**	
6.	Module-6	3	25-8-2023		**DM5**	
7.	Module-7	3	01-9-2023		**DM5**	
8.	Module-8	3	15-9-2023		**DM5**	
9.	Module-9	3	22-9-2023		**DM5**	
10.	Module-10	3	29-9-2023		**DM5**	
11.	Module-11	3	6-10-2023		**DM5**	
12.	Module-12	3	13-10-2023 & 20-10-2023		**DM5**	
13.	Internal exam	3	27-10-2023			

Teaching Learning Methods			
DM1	Chalk and Talk	**DM4**	Assignment/Test/Quiz
DM2	ICT Tools	**DM5**	Laboratory/Field Visit
DM3	Tutorial	**DM6**	Web-based Learning

PART-C

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	**Ethics:** 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
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. S. Srinivasa Reddy	Mr.N.Srinivasa Rao	Dr.S.Jayaprada	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, 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
PART-A

Name of Course Instructor: Dr K N Prasanthi
Course Name & Code　　　: Cloud Computing - 20CS24
L-T-P Structure　　　　　:3-0-0　　　　　　　　　　　　　　　　**Credits:** 3
Program/Sem/Sec　　　　: B.Tech-CSE/VII/C　　　　　　　　　**A.Y.:** 2023-24

PREREQUISITE: Computer Networks and Operating Systems

COURSE EDUCATIONAL OBJECTIVES (CEOs):

- To explain the evolving computer model and cloud computing.
- To introduce the various levels of services that can be achieved by cloud.
- To describe the security aspects in cloud.
- To motivate students to do programming and experiment with the various cloud computing environments.

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

CO1	Illustrate the key dimensions of the challenge of Cloud Computing.
CO2	Classify the levels of virtualization and mechanisms of tools.
CO3	Analyze cloud infrastructure including Google Cloud and Amazon Cloud.
CO4	Create Combinatorial Auctions for cloud resource and design scheduling algorithms for computing cloud.
CO5	Assess control storage systems and cloud security, the risks involved its impact and develop cloud application.

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

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

Text Books:

1. Distributed and Cloud Computing, Kai Hwang, Geoffry C. Fox, Jack J. Dongarra MK Elsevier.
2. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.

Reference Books:

1. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madisetti, University Press
2. Cloud Computing, A Practical Approach, Anthony T Velte, Toby J Velte, Robert Elsenpeter, TMH
3. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christen vecctiola, S Tammaraiselvi, TMH

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I:

S.No.		Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	1	Systems Modeling, Clustering and virtualization	1	3-7-23		TLM2	
2.		The age of Internet computing	1	4-7-23		TLM2	
3.		Scalable computing over the Internet	2	6-7-23 7-7-23		TLM2	
4.		Technologies for network based systems	2	10-7-23 11-7-23		TLM2	
5.		System models for distributed and cloud computing	2	13-7-23 14-7-23		TLM2	
6.		Performance, security and energy efficiency	2	15-7-23 17-7-23		TLM2	
No. of Classes Required to complete: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	HOD Sign Weekly
7.	1	Implementation levels of virtualization	2	18-7-23 20-7-23		TLM2	
8.		Virtualization structures/ tools and mechanisms	3	21-7-23 22-7-23 24-7-23		TLM2	
9.		Virtualization of CPU	2	25-7-23 27-7-23		TLM2	
10.		Memory and I/O Devices	3	28-7-23 31-7-23 1-8-23		TLM2	
11.		Virtual clusters and resource management	2	3-8-23 4-8-23		TLM2	
12.		Virtualization for data center automation	2	5-8-23 7-8-23		TLM2	
No. of Classes Required to complete: 14					No. of Classes Taken:		

UNIT-III:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
13	Cloud computing and service models	3	8-8-23 10-8-23 11-8-23		TLM2	
14	Public cloud platforms	3	14-8-23 17-8-23 18-8-23		TLM2	
15	Service oriented architecture	3	19-8-23 21-8-23 22-8-23		TLM2	
16	Programming on amazon aws	3	24-8-23 25-8-23		TLM2	

			26-8-23			
17	Programming on Microsoft azure	3	4-9-23 5-9-23 7-9-23		TLM2	
No. of Classes Required to complete:15				No. of Classes Taken:		

UNIT-IV:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
18. 2	Policies and mechanisms for resource management	3	8-9-23 9-9-23 11-9-23		TLM2	
19.	Applications of control theory to task scheduling on a cloud	3	12-9-23 14-9-23 15-9-23		TLM2	
20.	Stability of a two-level resource allocation architecure	3	16-9-23 19-9-23 21-9-23		TLM2	
21.	Feedback control based on dynamic thresholds	3	22-9-23 23-9-23 25-9-23		TLM2	
22.	Coordination of specialized autonomic performance managers	3	26-9-23 29-9-23 30-9-23		TLM2	
23.	Resource bundling	3	3-10-23 5-10-23 6-10-23		TLM2	
24.	Scheduling algorithms for computing clouds	3	7-10-23 9-10-23 10-10-23		TLM2	
No. of Classes Required to complete:21				No. of Classes Taken:		

UNIT-V:

S.No.		Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
25.	3	Evolution of storage technology	1	12-10-23		TLM2	
26.		Storage models	2	13-10-23 16-10-23		TLM2	
27.		File systems and database	2	17-10-23 19-10-23		TLM2	
28.		Distributed file systems	2	20-10-23 21-10-23		TLM2	
29.		General parallel file systems	2	24-10-23 26-10-23		TLM2	
30.		Google file system	2	27-10-23 28-10-23		TLM2	
No. of Classes Required to complete:11					No. of Classes Taken:		

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

PART-C

EVALUATION PROCESS (R20 Regulation):

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

PART-D

PROGRAMME OUTCOMES (POs):

PO 1	**Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	**Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and 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	**Ethics**: 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 enginee**ring and management principles and apply these to one's own work, as a member and** leader in a team, to manage projects and in multidisciplinary environments.
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	To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.
PSO 2	To inculcate an ability to Analyse, Design and implement data driven applications into the students.
PSO 3	Develop an ability to implement various processes / methodologies /practices empl[...] in design, validation, testing and maintenance of software products

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

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor : Mr.P. NAGABABU

Course Name & Code : SOFTWARE PROJECT MANAGEMENT(20CS25)

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

Program/Sem/Sec : B.Tech., CSE, VII-Sem., Section – C   A.Y: 2023 - 24

PRE-REQUISITE: Software Engineering, Software Testing Methodologies, Object Oriented Analysis and Design.

COURSE EDUCATIONAL OBJECTIVES (CEOs):

This course is centered on unique aspects of software project management at three levels: Organizational management, Infrastructure management and project management and measurement of the Project, and how these are applied to actual software projects

COURSE OUTCOMES (COs):

At the end of the course, students are able to

CO1	Identify the process of Conventional Software Management the Evolution and Improvement of Software Economics. (Remember-L1)
CO2	Describe the basic s/w processes, Cost estimation and improvement in s/w Economics. (Remember-L1)
CO3	Summarize Life cycle phases and Artifacts of the process in Software project management. (Understand-L2)
CO4	Apply Workflows and checkpoints in Iterative Process planning.(Apply-L3)
CO5	Illustrate Project Organizations, process automation building blocks and metrics in assessing Software Quality. (Understand-L2)

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

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

1- Low   **2 –**Medium   **3-** High

TEXT BOOKS:

T1   Walker Royce ,"Software Project Management", Pearson Education, 2015.

REFERENCE BOOKS:

R1   Robert K. Wysocki, "Effective Software Project Management", Wiley Publication,2011.
R2   Walker Royce, "Software Project Management", Addison-Wesley, 1998.
R3   Bob Hughes and Mike Cotter ell, "Software Project Management", Tata McGraw
        HillEdition,2000

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Conventional Software Management, Evolution of Software Economics, Improving Software Economics

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.	The waterfall model	2	3-7-23 & 4-7-23		TLM1, TLM2	
2.	conventional Software Management performance	2	5-7-23 & 6-7-23		TLM1, TLM2	
3.	Software Economics	2	10-7-23 & 11-7-23		TLM1, TLM2	
4.	pragmatic software cost estimation	1	12-7-23		TLM1, TLM2	
5.	Reducing Software product size	2	13-7-23 & 15-7-23		TLM1, TLM2	
6.	improving software processes	1	17-7-23		TLM1, TLM2	
7.	The principles of conventional software Engineering	2	18-7-23 & 19-7-23		TLM1, TLM2	
8.	principles of modern software management	2	20-7-23 & 22-7-23		TLM1, TLM2	
9.	transitioning to an iterative process.	1	24-7-23		TLM1, TLM2	
10.	Assignment-1/Tutorial-1	1	25-7-23		TLM3	
No. of classes required to complete UNIT-I		16		No. of classes taken:		

UNIT-II: Life cycle phases, Artefacts of the process.

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.	Engineering and production stages	1	26-7-23		TLM1, TLM2	
12.	Inception, Elaboration	2	27-7-23 & 31-7-23		TLM1, TLM2	
13.	Construction, transition phases	3	1-8-23,2-8-23&3-8-23		TLM1, TLM2	
14.	artifact sets, Management artifacts	2	5-8-23 &7-8-23		TLM1, TLM2	
15.	Engineering artifacts, programmatic artifacts	2	8-8-23 &9-8-23		TLM1, TLM2	
16.	A Management perspective and technical perspective	2	10-8-23 &14-8-23		TLM1, TLM2	
17.	Assignment-2/Tutorial-2	1	16-8-23		TLM1, TLM2	
No. of classes required to complete UNIT-II		13		No. of classes taken:		

UNIT-III: Work Flows of the process, Checkpoints of the process, Iterative Process Planning.

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
18.	Software process workflows	2	17-8-23 &19-8-23		TLM1, TLM2	
19.	Iteration workflows.	1	21-8-23		TLM1, TLM2	
20.	Major milestones, Minor Milestones	2	22-8-23 &23-8-23		TLM1, TLM2	
21.	Periodic status assessments.	2	24-8-23 &26-8-23		TLM1, TLM2	
22.	Work breakdown structures, planning guidelines	1	27-8-23		TLM1, TLM2	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
23.	cost and schedule estimating,	1	4-9-23		TLM1, TLM2	
24.	Iteration planning process, Pragmatic planning	1	5-9-23		TLM1, TLM2	
25.	Assignment-3/Tutorial-3	1	7-9-23		TLM3	
No. of classes required to complete UNIT-III		11		No. of classes taken:		

UNIT-IV: Project Organizations and Responsibilities, Process Automation, Project Control and Process instrumentation.

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.	Line-of-Business Organizations	1	11-9-23		TLM1, TLM2	
27.	Project Organizations	2	12-9-23 &13-9-23		TLM1, TLM2	
28.	evolution of Organizations	1	14-9-23		TLM1, TLM2	
29.	Automation Building blocks, Project Environment	2	16-9-23 &19-9-23		TLM1, TLM2	
30.	seven core Metrics	2	20-9-23 &21-9-23		TLM1, TLM2	
31.	Management indicators	2	23-9-23 &25-9-23		TLM1, TLM2	
32.	quality indicators, life cycle expectations	3	26-9-23, 27-9-23 &30-9-23		TLM1, TLM2	
33.	pragmatic Software Metrics.	2	3-10-23 &4-10-23		TLM1, TLM2	
34.	Assignment-4/Tutorial-4	1	5-10-23		TLM3	
No. of classes required to complete UNIT-IV		16		No. of classes taken:		

UNIT-V: Tailoring the Process, Future Software Project Management, Case Study.

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	Process discriminates	3	7-10-23, 9-10-23 &10-10-23		TLM1, TLM2	
36	Modem Project Profiles	3	11-10-23, 12-10-23 &16-10-23		TLM1, TLM2	
37	Next generation Software economics	2	17-10-23 &18-10-23		TLM1, TLM2	
38	modern process transitions.	3	19-10-23, 21-10-23 &24-10-23		TLM1, TLM2	
39	Command Centre Processing and Display system-Replacement(CCPDS)	2	25-10-23 & 26-10-23		TLM1, TLM2	
40	Assignment-5/Tutorial-5	1	28-10-23		TLM3	
No. of classes required to complete UNIT-V		14		No. of classes taken:		

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

PART C

EVALUATION PROCESS (R20 Regulations):

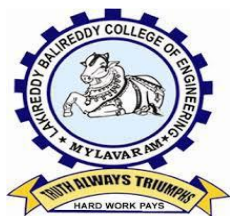| Evaluation Task	Marks
Assignment-I (Units-I, II & UNIT-III (Half of the Syllabus))	A1=5
I-Descriptive Examination (Units-I, II & UNIT-III (Half of the Syllabus))	M1=15
I-Quiz Examination (Units-I, II & UNIT-III (Half of the Syllabus))	Q1=10
Assignment-II (Unit-III (Remaining Half of the Syllabus),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

PROGRAMME 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, demonstrate the knowledge of, and need for sustainable development.
PO 8	**Ethic**s: Apply ethical principles and commit to professional ethics, 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, 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.P.Nagababu	Mr.P.Nagababu	Dr.S.Jayaprada	Dr. D. Veeraiah
Signature				

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 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, cseoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor   : Dr. M. Sitha Ram
Course Name & Code   : BLOCKCHAIN TECHNOLOGIES (20CS29)
L-T-P Structure   : 3-0-0   Credits : 3
Program/Sem/Sec   : B.Tech., CSE., VII-C   A.Y: 2022-23

PRE-REQUISITE: Information Security

COURSE EDUCATIONAL OBJECTIVES (CEOs):

To understand block chain technology and Crypto currency works.

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

CO 1	Demonstrate the block chain basics, Crypto currency. (UnderstandL2)
CO 2	Compare and contrast the use of different private vs. public block chain and use cases (Understand-L2)
CO 3	Design an innovative Bit coin Block chain and scripts, Block chain Science on varies coins (Apply-L3)
CO 4	Classify Permission Block chain and use cases Hyper ledger, Corda(Analyze-L4)
CO 5	Use of Block-chain in E-Governance, Land Registration, Medical Information Systems and others (Apply-L3)

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

TEXT BOOKS:

     T1: Block chain Blue print for Economy by Melanie Swan

REFERENCE BOOKS:

     Block chain Basics: A Non-Technical Introduction in 25 Steps 1st Edition, by Daniel Drescher.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN): Section C

UNIT-I :

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Introduction	2	10.07.2023 & 11.07.2023		TLM1	
2.	basic ideas behind block chain	2	12.07.2023 & 13.07.2023		TLM2	
3.	how it is changing the landscape of digitalization	2	14.07.2023 & 17.07.2023		TLM1	
4.	introduction to cryptographic concepts required	2	18.07.2023 & 19.07.2023		TLM1	
5.	Block chain or distributed trust	2	20.07.2023 & 21.07.2023		TLM2	
6.	Currency	1	24.07.2023		TLM1	
7.	Cryptocurrency	1	25.07.2023		TLM1	
8.	How a Cryptocurrency works	1	26.07.2023		TLM1	
9.	Financial services	1	27.07.2023		TLM2	
10.	Bitcoin prediction markets.	2	28.08.2023 & 31.08.2023		TLM1	
11.	Tutorial - I	1	01.08.2023		TLM1	
No. of classes required to complete UNIT-I		**17**		**No of classes taken**		

UNIT-II:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
12.	Hashing	1	02.08.2023		TLM1	
13.	public key cryptosystems	2	03.08.2023 & 04.08.2023		TLM1	
14.	private vs public block chain and use cases	1	07.07.2023		TLM1	
15.	Hash Puzzles	1	08.08.2023		TLM1	
16.	Extensibility of Block chain concepts	2	09.08.2023 & 10.08.2023		TLM1	
17.	Digital Identity verification	1	11.08.2023		TLM1	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
18.	Block chain Neutrality	2	14.08.2023 & 16.08.2023		TLM1	
19.	Digital art	1	17.08.2023		TLM1	
20.	Block chain Environment	2	18.08.2023 & 21.08.2023		TLM1	
21.	Tutorial - II	1	22.08.2023		TLM3	
No. of classes required to complete UNIT-II		**14**		**No of classes taken**		

UNIT-III:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
22.	Bitcoin Block chain and scripts	2	23.08.2023 & 24.08.2023		TLM1	
23.	Use cases of Bitcoin Blockchain scripting language in micropayment	2	25.08.2023 & 28.08.2023		TLM1	
24.	escrow etc Downside of Bit coin mining	2	29.08.2023 & 30.08.2023		TLM2	
25.	Block chain Science: Grid coin	2	31.08.2023 & 01.09.2023		TLM1	
26.	Folding coin	1	04.09.2023		TLM2	
27.	Block chain Genomics	1	05.09.2023		TLM1	
28.	Bit coin MOOCs	1	05.09.2023		TLM2	
29.	Tutorial - III	1	07.09.2023		TLM3	
No. of classes required to complete UNIT-III		**12**		**No of classes taken**		

UNIT-IV:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
30.	Ethereum continued	2	08.09.2023 & 11.09.2023		TLM1	
31.	IOTA	1	12.09.2023		TLM1	
32.	The real need for mining	1	13.09.2023		TLM2	
33.	consensus	1	14.09.2023		TLM1	
34.	Byzantine Generals Problem	1	15.09.2023		TLM2	
35.	Consensus as a distributed coordination problem	2	19.09.2023 & 20.09.2023		TLM1	

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.	Coming to private or permissioned block chains	2	21.09.2023 & 22.09.2023		TLM2	
37.	Introduction to Hyper ledger	1	25.09.2023		TLM1	
38.	Currency & Token	1	26.09.2023		TLM1	
39.	Campus coin	1	27.09.2023		TLM2	
40.	Coin drop as a strategy for Public adoption	1	29.09.2023		TLM1	
41.	Currency Multiplicity	1	03.10.2023		TLM2	
42.	Demurrage currency	1	04.10.2023		TLM1	
43.	Tutorial - IV	1	05.10.2023		TLM3	
No. of classes required to complete UNIT-IV		**17**		**No of classes taken**		

UNIT-V:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
44.	Technical challenges	2	09.10.2023 & 10.10.2023		TLM1	
45.	Business model challenges	2	11.10.2023 & 12.10.2023		TLM2	
46.	Scandals and Public perception	2	13.10.2023 & 16.10.2023		TLM1	
47.	Government Regulations	2	17.10.2023 & 18.10.2023		TLM2	
48.	Uses of Block chain in E-Governance	1	19.10.2023		TLM1	
49.	Land Registration	1	20.10.2023		TLM1	
50.	Medical Information Systems.	1	25.10.2023		TLM2	
51.	Tutorial – V / Quiz - V	1	26.10.2023		TLM3	
52.	Discussion about SEE paper	1	27.10.2023		TLM3	
No. of classes required to complete UNIT-V		**13**		**No of classes taken**		

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

PART-C

EVALUATION PROCESS (R20 Regulations):

Evaluation Task	Marks
Assignment-I (Unit-I , Unit-II , Unit-III)	A1=5
Assignment-II (Unit-III , Unit-IV , Unit-V)	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	**Ethics**: 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**
Dr. M. Sitha Ram	Dr. M. Srinivasa Rao	Dr D Venkata Subbaiah	Dr.D.Veeraiah

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor : Mr.Imran Abdul
Course Name & Code : Utilization of Electrical Energy & 20EE83
L-T-P Structure : 3-0-0   Credits : 3
Program/Sem/Sec : B.Tech, CSE(C)., VII-Sem.   A.Y   : 2023-24

Pre-requisites : --NIL

Course Educational Objective: This course enables the student to acquire knowledge on methods of Electric Heating and welding,different lighting schemes.It also introduces the concepts of Electric Drives for Industrial and traction system and also different tariff methods.

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

CO 1	Understand mechanism of electric heating and electric welding**(Understanding –L2)**
CO 2	Analyze performance of various lighting schemes(Understanding –L2)
CO 3	Analyze the performance of electric drive systems**(Understanding –L2)**
CO 4	Illustrate the different schemes of traction and its main components**(Understanding –L2)**
CO5	Understand various tariff methods and power factor improvement techniques**.(Understanding –L2)**

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

Cos	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO a	PSO b	PSO c
CO1	2	2	2												
CO2	2	2	2								2				
CO3	2	2	2												
CO4	2	2	2								2				
CO5	2	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).

TEXT BOOKS:

T1: C.L.Wadhwa "Generation, Distribution and Utilization of Electrical energy, New Age International Publishers,3rd Edition,2015.

T2: N.V.Suryanarayana "Utilization of electric power including electric drives and electric traction, New age international publishers New Delhi,2nd edition 2014.

REFERENCE BOOKS:
R1:   Art & Science of Utilization of electrical Energy, Partab, Dhanpat Rai & Co., 2004.
R2:   Utilization of Electric Energy, E. Openshaw Taylor and V. V. L. Rao,
    Universities Press, 2009.

Part - B
COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I : ELECTRIC HEATING &WELDING

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, CEO's &CO's	1	03-07-2023		TLM1	
2.	Advantages &applications of Electric heating	1	04-07-2023		TLM1	
3.	Classification of electric heating	1	06-07-2023		TLM1	
4.	Resistance heating	1	07-07-2023		TLM1	
5.	Arc heating	1	10-07-2023		TLM1	
6.	Induction heating	1	11-07-2023		TLM1	
7.	dielectric heating	1	13-07-2023		TLM1	
8.	Causes of failures of heating elemdents	1	14-07-2023		TLM1	
9.	Materials for heating elements	1	15-07-2023		TLM2	
10.	Requirement of good heating material	1	17-07-2023		TLM2	
11.	ARC Furnace	1	18-07-2023		TYLM1	
12.	Resistance welding	1	20-07-2023		TLM2	
13.	Spot welding,seam welding	1	21-07-2023		TLM1 &TLM2	
14.	,Arc welding	1	22-07-2023		TLM1 &TLM2	
15.	Comparision between AC and DC welding	1	24-07-2023		TLM1	
No. of classes required to complete UNIT-I : 15					No. of classes taken:	

UNIT-II : ILLUMINATION ENGINEERING

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
16	Introduction	1	25-07-2023		TLM1	
17	Nature of light	1	27.07.2023		TLM1	
18	Laws of illumination	1	28.07.2023		TLM1	
19	Laws of illumination	1	31-07-2023		TLM1	

20	Lighting schemes, sources of light	1	01-08-2023		TLM1	
21	Fluorescent Lamp, CFL and LED	1	03-08-2023		TTLM2	
22	Sodium Vapor Lamp	1	04-08-2023		TLM2	
23	Neon lamps	1	05-08-2023		TLM2	
24	mercury vapor lamps	1	07-08-2023		TLM2	
25	Comparision between tungsten &fluroscent tubes	1	08-08-2023		TLM2	
26	Requirements of good lighting	1	10-08-2023		TLM1/TLM2	
27	Street lighting	1	11-08-2023		TLM1/TLM2	
28	Assignment/Quiz	1	12-08-2023		TLM1	
No. of classes required to complete UNIT-II : 12					No. of classes taken:	

UNIT-III: ELECTRIC DRIVES

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
29	Introduction	1	14-08-2023		TLM1 &TLM2	
30	Elements of drive, advantages	1	17-08-2023		TLM1 &TLM2	
31	Factors affecting selection of motor	1	18-08-2023		TLM1 &TLM2	
32	Types of loads	1	19-08-2023		TLM1 &TLM2	
33	Industrial applications	1	21-08-2023		TLM1 &TLM2	
34	Transient Characteristics of drives	1	22-08-2023		TLM1 &TLM2	
35	Steady state characteristics of drives	1	24-08-2023		TLM1 &TLM2	
36	Steady state characteristics of drives	1	25-08-2023		TLM1 &TLM2	
37	Size of the motor	1	26-08-2023		TLM1 &TLM2	
38	Size of the motor	1	04-09-2023		TLM1 &TLM2	
39	Load Equalization	1	05-09-2023		TLM1 &TLM2	
40	Load Equalization	1	08-09-2023		TLM1 &TLM2	
41	Assignment/Quiz	1	11-09-2023		TLM1 &TLM2	
No. of classes required to complete UNIT-III : 10					No. of classes taken:	

UNIT-IV : ELECTRIC TRACTION

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
	Introduction	1	12-09-2023		TLM1	
	Requirement of an ideal traction system	1	14-09-2023		TLM1	
	Supply system for electric traction	1	15-09-2023		TLM1	
42	Train movement	1	16-09-2023		TLM1	
43	mechanism of train movement	1	18-09-2023		TLM1	
44	Traction motors	1	21-09-2023		TLM1	
45	Modern trends in electric traction	1	22-09-2023		TLM1	
46	Automation in traction	1	23-09-2023		TLM1	
47	Speed time curves for different services	1	25-09-2023		TLM1	
48	Trapezoidal and quadrilateral speed time curves	1	26-09-2023		TLM1	
49	Problems on train movement	1	29-09-2023		TLM1	
50	Assignment/quiz	1	30-09-2023		TLM1	
51	Revision	1	03-10-2023		TLM1	
No. of classes required to complete UNIT-IV : 13					No. of classes taken:	

UNIT-V: TARIFF AND POWER FACTOR IMPROVEMENT

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
52	Desirable characteristics	1	05-10-2023		TLM1 &TLM2	
53	types	1	06-10-2023		TLM1 &TLM2	
54	Flat rate	1	07-10-2023		TLM1 &TLM2	
55	Block-rate	1	09-10-2023		TLM1 &TLM2	
56	KVA maximum demand	1	10-10-2023		TLM1 &TLM2	
57	Time of Day tariff	1	12-10-2023		TLM1 &TLM2	
58	Advantages Disadvantages of low power factor Advantages of improved p.f	1	13-10-2023		TLM1 &TLM2	
59						
60	Improvement devices	1	16-10-2023		TLM1 &TLM2	

61	Power factor improvement using static capacitor	1	17-10-2023		TLM1 &TLM2	
62	Most economical power factor	1	19-10-2023		TLM1 &TLM2	
63	Location of power factor improvement devices from consumer	1	21-10-2023		TLM1 &TLM2	
65	REVISION	1	21-10-2023		TLM1	
No. of classes required to complete UNIT-V : 13					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
44	Economic aspects in utilization of electrical energy	2	23-10-2023 26-10-2023& 28-10-2023		TLM1/ TLM2	CO5	T2,R1,R2	

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

PART-C

EVALUATION PROCESS (R20 Regulation):

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

PEO1: To develop intelligent systems with a cutting-edge combination of machine learning, analytics, and visualisation technologies.

PEO2: To adapt the new technologies and develop the solutions to real world problems with ethical practices thereby contributing to the society.

PEO3: To continue education for fulfilling their long-term goals and achieve satisfaction as successful

professionals in industry, academia and research.

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):

Program Specific Outcomes (PSOs):

PSO1: To apply the fundamental engineering knowledge, computational principles, and methods for extracting knowledge from data to identify, formulate and solve real time problems.

PSO2: To develop multidisciplinary projects with advanced technologies and tools to address social and environmental issues.

PSO3: To provide a concrete foundation and enrich their abilities for Employment and Higher studies in Artificial Intelligence and Data science with ethical values.

Mr. Imran Abdul	Dr.A.V.G.A.Marthanda	Dr.M.S.Giridhar	Dr.J.Siva vara prasad
Course Instructor	Course Coordinator	Module coordinatorCoordinator	HOD

DEPARTMENT OF MECHANICAL ENGINEERING

COURSE HANDOUT

PART-A

Name of Course Instructor   : C.Rajamallu
Course Name & Code   : **BASIC CIVIL ENGINEERING & 17CE80**
L-T-P Structure   : 3-0-0   Credits : 3
Program/Sem/Sec   : B.Tech., CSE., VII-Sem., Sections- A-B-C-   A.Y   : 2023-24

PRE-REQUISITE: Nil

COURSE EDUCATIONAL OBJECTIVES (CEOs):. This course deals with the importance of building planning, properties and applications of various building materials, soil classification and different types of foundations, important aspects of surveying, levelling operations and identify the terminology in roadway and railway networks, principles of water resources and environmental engineering

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

CO 1	Recognize the importance of building planning for construction
CO 2	Identify appropriate building materials for construction purposes
CO 3	Distinguish the different types of soils and foundations required for specific usage
CO 4	Evaluate the basics of surveying and levelling operations for field application and categorize the important elements of roadway and railway networks
CO 5	Discriminate the importance of quantity and quality aspects of water in the society and priorities for sanitation management.

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		2	1	3
CO2				2		2	1				2		2	1	3
CO3		1	1	2		2	1				2		2	1	3
CO4		1	1	2		2	1				2		2	1	3
CO5		1	1	2	2	2	1				2		2	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   1.   M.S Palanichamy "Basic Civil Engineering", Tata McGraw Hill Publishing 2000.

REFERENCE BOOKS:

R1   1.   S S Bhavikatti "Basic Civil Engineering", New age International Publications, 2010

R2   C P Kaushik& S S Bhavikatti "Basic Civil Engineering ", New age International Publications 2010.

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

UNIT-I: Building Planning

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.	Building Planning- Role of a Civil Engineer	1	3-07-2023		TLM2	
2.	Inter connection among specializations in Civil Engineering	1	34-07-2023		TLM2	
3.	Elements of a Building, Basic Requirements of a Building	1	5-07-20233		TLM2	
4.	Planning- Hot and dry climates	1	7-07-2023		TLM1	
5.	Hot and wet climates, Cold climatic conditions	1	10-07-2023		TLM1	
6.	Aspect and Prospect, Roominess- Grouping, Privacy, circulation	1	11-07-2023		TLM1	
7.	Sanitation and ventilation	1	12-07-2023		TLM2	
8.	Orientation, Economy, Role of Bye-laws	1	14-07-2023		TLM2	
No. of classes required to complete UNIT-I:				No. of classes taken:		

UNIT-II: Building Materials

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.	Building Materials - Classification	1	15-07-2023		TLM1	
2.	Rocks, Bricks Classification, Composition, Properties, Commercial forms, Uses	1	17-07-2023		TLM2	
3.	Timber, Ply wood Classification, Composition, Properties, Commercial forms	1	18-07-2023		TLM2	
4.	Glass, Bitumen Classification, Composition, Properties, Commercial forms,	1	19-07-2023		TLM1	

5.	Aluminium, Cement Classification, Composition, Properties, Commercial forms,	1	21-07-2023		TLM1	
6.	Steel, Concrete Classification, Composition, Properties, Commercial forms, Uses	1	22-07-2023		TLM2	
7.	Mortar Classification, Composition, Properties, Commercial forms, Uses	1	24-07-2023		TLM2	
8.	Concept of eco-friendly materials, examples	1	25-07-2023		TLM1	
No. of classes required to complete UNIT-II:				No. of classes taken:		

UNIT-III: SOIL CLASSIFICATION AND FOUNDATION

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.	Types of soils, soil classification	1	26-07-2023		TLM1	
2.	Engineering properties	1	28-07-2023		TLM1	
3.	Bearing Capacity of soil, purpose and methods of improving bearing capacity	1	31-07-2023		TLM2	
4.	Foundations – Requirements	1	1-08-2023		TLM2	
5.	Loads, Types	1	2-08-2023		TLM1	
6.	for special structures-water tanks-	1	4-08-2023		TLM2	
7.	for special structures- silos, chimneys- transmission line towers- cooling towers, telecommunication towers	1	5-08-2023		TLM1	
No. of classes required to complete UNIT-III:07				No. of classes taken:		

UNIT-IV : SURVEYING, LEVELLING & HIGHWAY NETWORK

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.	Objective of surveying– Principles, applications and uses of - chain surveying	1	7-08-2023		TLM2	
2.	theodolite, levelling, contour maps, Planimeter, EDM concept	1	8-08-2023		TLM2	
3.	linear distance and area measurement	1	9-08-2023		TLM1	
4.	Total station- GIS-Concept and applications in civil engineering.	1	10-08-2023		TLM2	
5.	CRT Classes:5-9-2022 to 17-09-2022					
6.	MID-1 Examinations:19-09-2022 to 24-09-2022					
7.	Indian highways- Basic terminology- Classification of roads - PIEV theory - Traffic signs - IRC Code provisions	1	14-08-2023		TLM1	

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
8.	Indian railways –Permanent way and components of railway track	1	18-08-2023		TLM2	
9.	Gauges – Rails -Sleepers – Ballast.	1	19-08-2023		TLM2	

No. of classes required to complete UNIT-IV:07			No. of classes taken:	

UNIT-V : WATER RESOURCES AND ENVIRONMENTAL ENGINEERING

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.	Objectives of water supply system-Sources of water supply-Hydrologic cycle	1	8-09-2023		TLM1	
2.	Rainfall measurement - Purpose of dams, reservoirs, intakes, infiltration galleries	1	11-09-2023		TLM1	
3.	Water demands –Water quality parameters and their impacts - Principles of water treatment	1	14-09-2023		TLM2	
4.	Objectives of water distribution systems	1	18-09-2023		TLM2	
5.	Wastewater characteristics and their impacts	1	19-09-2023		TLM1	
6.	Principles of sewage treatment	1	21-09-2023		TLM2	
7.	Disposal of sewage	1	22-09-2023		TLM2	
8.	Water quality standards for – drinking purpose,	1	23-09-2023		TLM2	
9.	irrigation, -making	1	25-09-2023		TLM1	
10.	curing of concrete	1	26-09-2023		TLM1	
11.	methods of water distribution systems	1	28-9-2023		TLM2	
12.	Sewage generation in a society	1	1-10-2023		TLM2	
13.	Revision of Unit-1	1	1-10-2023		TLM2	
14.	Revision of Unit-1	1	4-10-2023		TLM2	
15.	Revision of Unit-2	1	5-10-2023		TLM1	
16.	Revision of Unit-2	1	8-10-2023		TLM1	
17.	Revision of Unit-3	1	11-10-2023		TLM1	
18.	Revision of Unit-3	1	12-10-2023		TLM1	
19.	Revision of Unit-4	1	13-10-2023		TLM2	
20.	Revision of Unit-4	1	25-10-2023		TLM2	
21.	Revision of Unit-5	1	26-10-2023		TLM2	
22.	Revision of Unit-5	1	27.-10-2023		TLM1	

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	3-07-2023	26-08-2022	8W
I Mid Examinations	28-08-2023	2-09-2023	1W
II Phase of Instructions	4-09-2022	28-10-2023	8W
II Mid Examinations	30-10-2023	4-11-2023	1W
Preparation and Practicals	6-11-2023	11-11-2023	1W
Semester End Examinations	13-11-2023	25-11-2023	2W

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	**Ethics**: 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	Possesses necessary skill set to analyze and design various systems using analytical and software tools related to civil engineering
PSO 2	Possesses ability to plan, examine and analyse the various laboratory tests required for the professional demands
PSO 3	Possesses basic technical skills to pursue higher studies and professional practice in civil engineering domain

Course Instructor	Course Coordinator	Module Coordinator	HOD
(C.Rajamallu)	(C.Rajamallu)	(B.Narasimha Rao)	(S.Pichi 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.
Phone: 08659-222933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor: A. Dhanunjay Kumar

Course Name & Code	: MANAGEMENT SCIENCE FOR ENGINEERS & 20HS02	**Regulation**: R20
L-T-P Structure	: 3-0-0	**Credits:** 03
Program/Sem/Sec	: B.Tech VII Sem (C)	**A.Y.:** 2023-2024

PREREQUISITE: Professional ethics and human values

COURSE EDUCATIONAL OBJECTIVES (CEOs):
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 understand thematerial management techniques.

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

CO1	Understand management principles to practical situations based on the organization structures. (L2)
CO2	Design Effective plant Layouts by using work study methods. (L2)
CO3	Apply quality control techniques for improvement of quality and materials management. (L3)
CO4	Develop best practices of HRM in corporate Business to raise employee productivity. (L2)
CO5	Identify critical path and project completion time by using CPM and PERT techniques. (L3)

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	2	-	-	3	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
CO3	-	3	-	-	-	-	-	-	-	-	-	3	-	-	-
CO4	-	-	-	-	-	-	-	3	2	-	-	3	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	2	3	-	-	-
1 - Low				**2 –**Medium					**3 -** High						

TEXTBOOKS:

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

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

PART-B

COURSE DELIVERY PLAN (LESSON PLAN): Section - A

UNIT-I: 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.	Course Outcomes, Introduction to Subject	1	03-07-2023		**TLM1/TLM2**	
2.	Management-Nature and Importance	1	04-07-2023		**TLM1/TLM2**	
3.	Management functions	1	05-07-2023		**TLM1/TLM2**	
4.	Contributions of Taylor	1	06-07-2023		**TLM1/TLM2**	
5.	Fayal's Principles of management	1	08-07-2023		**TLM1/TLM2**	
6.	Contribution of Elton Mayo	1	10-07-2023		**TLM1/TLM2**	
7.	Maslow's & Herzberg's Two Factor Theory	1	11-07-2023		**TLM1/TLM2**	
8.	Douglas McGregor	1	12-07-2023		**TLM1/TLM2**	
9.	Basic Concepts of Organization-Authority	1	13-07-2023		**TLM1/TLM2**	
10.	Responsibility Delegation of Authority	1	15-07-2023		**TLM1/TLM2**	
11.	Departmentation and Decentralization	1	17-07-2023		**TLM1/TLM2**	
12.	Span of Control	1	18-07-2023		**TLM1/TLM2**	
13.	Line, Line and Staff organizations	1	19-07-2023		**TLM1/TLM2**	
14.	Functional, Committee	1	20-07-2023		**TLM1/TLM2**	
15.	Matrix Organizations	1	22-07-2023		**TLM1/TLM2**	
16.	Quiz-I	1	24-07-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-I: 16			**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
17.	Plant location	1	25-07-2023		**TLM1/TLM2**	
18.	Factors influencing location	1	26-07-2023		**TLM1/TLM2**	
19.	Principles		27-07-2023		**TLM1/TLM2**	
20.	Types of plant layouts	1				

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
21.	Methods of production (job, batchproduction)	1	31-07-2023		**TLM1/TLM2**	
22.	Mass production	1	01-08-2023		**TLM1/TLM2**	
23.	Work study - Basic procedureinvolved in method study and Work measurement	1	02-08-2023		**TLM1/TLM2**	
24.	Work study - Basic procedure involved in method study andWork measurement	1	03-08-2023		**TLM1/TLM2**	
25.	Quiz-II	1	05-08-2023		**TLM1/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
26.	Statistical quality control Introduction	1	07-08-2023		**TLM1/TLM2**	
27.	Concept of Quality & Quality Control	1	08-08-2023		**TLM1/TLM2**	
28.	Functions, Meaning of SQC	1	09-08-2023		**TLM1/TLM2**	
29.	Variables and attributes	1	10-08-2023		**TLM1/TLM2**	
30.	X chart	1	12-08-2023		**TLM1/TLM2**	
31.	R Chart	1	14-08-2023		**TLM1/TLM2**	
32.	C Chart	1	16-08-2023		**TLM1/TLM2**	
33.	P Chart	1	17-08-2023		**TLM1/TLM2**	
34.	Simple Problems	1	19-08-2023		**TLM1/TLM2**	
35.	Acceptance sampling	1	21-08-2023		**TLM1/TLM2**	
36.	Sampling plans	1	22-08-2023		**TLM1/TLM2**	
37.	Deming's contribution to quality	1	23-08-2023		**TLM1/TLM2**	
38.	Materials management	1	24-08-2023		**TLM1/TLM2**	
39.	Meaning and objectives	1	26-08-2023		**TLM1/TLM2**	
40.	Inventory control	1	04-09-2023		**TLM1/TLM2**	
41.	Need for inventory control	1	05-09-2023		**TLM1/TLM2**	
42.	Purchase procedure	1	07-09-2023		**TLM1/TLM2**	
43.	Store records					
44.	EOQ, ABC analysis	1	09-09-2023		**TLM1/TLM2**	
45.	Stock levels	1	11-09-2023		**TLM1/TLM2**	
46.	Quiz-3	1	12-09-2023		**TLM1/TLM2**	

| **No. of classes required to complete UNIT-III: 15** | | | | **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
47.	Concepts of HRM	1	13-09-2023		**TLM1/TLM2**	
48.	Basic functions of HR manager	1	14-09-2023		**TLM1/TLM2**	
49.	Manpower planning	1	16-09-2023		**TLM1/TLM2**	
50.	Recruitment	1	19-09-2023		**TLM1/TLM2**	
51.	Selection	1	20-09-2023		**TLM1/TLM2**	
52.	Training and development	1	21-09-2023		**TLM1/TLM2**	
53.	Placement	1	23-09-2023		**TLM1/TLM2**	
54.	Wage and salary administration	1	25-09-2023		**TLM1/TLM2**	
55.	Wage and salary administration	1	26-09-2023		**TLM1/TLM2**	
56.	Promotion	1	27-09-2023		**TLM1/TLM2**	
57.	Transfers Separation	1	30-09-2023		**TLM1/TLM2**	
58.	Performance appraisal					
59.	Job evaluation and merit rating	1	03-10-2023		**TLM1/TLM2**	
60.	Quiz-4	1	04-10-2023		**TLM1/TLM2**	
No. of classes required to complete UNIT-IV: 14				**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
61.	Introduction	1	05-10-2023		**TLM1/TLM2**	
62.	Early techniques in project management	1	07-10-2023		**TLM1/TLM2**	
63.	Network analysis	1	09-10-2023		**TLM1/TLM2**	
64.	Programme Evaluation and Review Technique (PERT)	1	10-10-2023		**TLM1/TLM2**	
65.	Problems	1	11-10-2023		**TLM1/TLM2**	
66.	Critical path method (CPM)	1	12-10-2023		**TLM1/TLM2**	
67.	Identifying critical path	1	14-10-2023		**TLM1/TLM2**	
68.	Problems	1	16-10-2023		**TLM1/TLM2**	
69.	Problems	1	17-10-2023		**TLM1/TLM2**	
70.	Probability of completing project within given time	1	18-10-2023		**TLM1/TLM2**	
71.	Project cost analysis	1	19-10-2023		**TLM1/TLM2**	
72.	Problems	1	25-10-2023		**TLM1/TLM2**	
73.	project crashing	1	26-10-2023		**TLM1/TLM2**	
74.	Simple problems	1	28-10-2023		**TLM1/TLM2**	

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

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

PART-C

EVALUATION PROCESS (R20 Regulation):

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

PART-D

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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 analyse 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	**Ethics**: 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	Design and develop modern communication technologies for building the inter disciplinary skills to meet current and future needs of industry.
PSO 2	Design and Analyze Analog and Digital Electronic Circuits or systems and Implement real time applications in the field of VLSI and Embedded Systems using relevant tools.
PSO 3	Apply the Signal processing techniques to synthesize and realize the issues related to real time applications.

Title	Course Instructor	Course Coordinator	Module Coordinator	Head of the Department
Name of the Faculty	A.Dhanunjay Kumar	Mr. A.Nageswara Rao	Dr.M.B.S.Sreekara Reddy	Dr.S.Pichi Reddy
Signature				
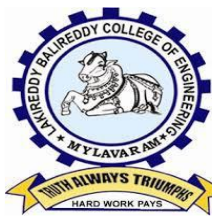
LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade & NBA (Under Tier - I),
An ISO 21001:2018,14001:2015,50001:2018 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B. REDDY NAGAR, MYLAVARAM, NTR DIST., A.P.-521 230.
hodcse@lbrce.ac.in, cseoffice@lbrce.ac.in, Phone: 08659-222 933, Fax: 08659-222931

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT
PART-A

Name of Course Instructor: Ms. B. Usha Rani
Course Name & Code : Continuous Integration and Continuous Delivery using DevOps(20CSS4)
L-T-P Structure : 1-0-2   **Credits:** 2
Program/Sem/Sec : B.Tech., CSE, VII-Sem., Section – C.   **A.Y.:** 2023-24

PRE-REQUISITE: **Basic knowledge of certain basic programming languages such as Java, and Python.**

COURSE EDUCATIONAL OBJECTIVES (CEOs):

      This course is designed to provide the core education necessary to build your DevOps vocabulary and to understand its principles and practices. With the help of key DevOps concepts and terminology, real-life case studies, examples and interactive group discussions and exercises, you will acquire a fundamental understanding of DevOps.

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

CO1	Understand the why, what, and how of DevOps adoption(**Understand – L2**)
CO2	Attain literacy on DevOps(**Apply L3**)
CO3	Align capabilities required in the team and create an automated CICD pipeline using a stack of tools(**Apply L3**)
CO4	Improve individual / teamwork skills, communication & report writing skills with ethical values.

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

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

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

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

REFERENCE BOOKS:

R 1	Learning Continuous Integration with Jenkins: A beginner's guide to implementing Continuous Integration and Continuous Delivery using Jenkins - Nikhil Pathania ,Packt publication[https://www.amazon.in/Learning-Continuous-Integration-JenkinsPathania/dp/1785284835]
R 2	Jenkins 2 – Up and Running: Evolve Your Deployment Pipeline for Next Generation Automation - Brent Laster, O'Reilly publication [https://www.amazon.in/Jenkins-2- Running-Brent-Laster/dp/1491979593]
R 3	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fapp%2Ftoc%2Flex_auth_01 3382690411003904735_shared%2Foverview[Software Engineering and Agile software development]
R 4	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fviewer%2Fhtml%2Flex_auth _01350157819497676810467[Development & Testing with Agile: Extreme Programming]
R 5	https://infyspringboard.onwingspan.com/web/en/login?ref=%2Fviewer%2Fhtml%2Flex_auth _01353898917192499226_shared[DevOps CICD]

PART-B

COURSE DELIVERY PLAN (LESSON PLAN):

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	HOD Sign Weekly
1.	Module-1	3	05-7-2023		**DM5**	
2.	Module-2	3	12-7-2023		**DM5**	
3.	Module-3	3	19-7-2023 & 26-7-2023		**DM5**	
4.	Module-4	3	2-8-2023		**DM5**	
5.	Module-5	3	9-8-2023		**DM5**	
6.	Module-6	3	16-8-2023		**DM5**	
7.	Module-7	3	23-8-2023		**DM5**	
8.	Module-8	3	13-9-2023		**DM5**	
9.	Module-9	3	20-9-2023		**DM5**	
10.	Module-10	3	27-9-2023		**DM5**	
11.	Module-11	3	4-10-2023		**DM5**	
12.	Module-12	3	11-10-2023 & 18-10-2023		**DM5**	
13.	Internal exam	3	25-10-2023			

Teaching Learning Methods			
DM1	Chalk and Talk	**DM4**	Assignment/Test/Quiz
DM2	ICT Tools	**DM5**	Laboratory/Field Visit
DM3	Tutorial	**DM6**	Web-based Learning

PART-C

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	**Ethics:** 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
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	Ms. B. Usha Rani	Mr.N.Srinivasa Rao	Dr.S.Jayaprada	Dr. D. Veeraiah
Signature				