LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)
Accredited by NAAC with " A " Grade ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi. and Affiliated to JNTUK, Kakinada
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

PROGRAM : B. Tech., VII-Sem., CSE
ACADEMIC YEAR : 2018-19
COURSE NAME & CODE : E-COMMERCE – S205
L-T-P STRUCTURE : 4-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : **Mr. LELLA KRANTHI KUMAR**
COURSE COORDINATOR : **Mr. LELLA KRANTHI KUMAR**
PRE-REQUISITE: Knowledge of security concepts and Networking.

COURSE OBJECTIVE:

- Understanding of a broad range of Internet tools.
- Business models and applications and Benefits and risks

COURSE OUTCOMES (CO)

CO1: Evaluate electronic commerce frame work, features and functions of E-commerce.
CO2: Analyze Business model for e-commerce, Inter organizational, Intra organizational commerce and supply chain management
CO3: Analyze modes of electronic commerce and Identify approaches for secure electronic commerce.
CO4: Categorize electronic payment systems and evaluate security of e-commerce.
CO5: Explore various approaches and technologies used in business over the internet.

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

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

BOS APPROVED TEXT BOOKS:

T1 Kalakota, Whinstone, Frontiers of electronic commerce –Pearson.
T2 Daniel Minoli, Emma Minoli,Web Commerce Technology Handbook,TMH.

BOS APPROVED REFERENCE:

R1 Bharat Bhasker, Electronic Commerce -Framework, technologies and Applications - TMH Publications.
R2 Joseph PT: e-Commerce –A Managerial Perspective (PHI) & TMH.
R3 Daniel Amor, E Business R (Evolution), Pearson Edude.
R4 Krishnamurthy, E-Commerce Management, Vikas Publishing House. David Whiteley, E-Commerce: Strategy, Technologies and Applications, TMH.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	11-06-18		**TLM1**	CO1	T1	
2.	Course Outcomes	1	12-06-18		**TLM1**	CO1	T1	
3.	Introduction to UNIT-I	1	13-06-18		**TLM1**	CO1	T1	
4.	Overview of Electronic Commerce (EC)	1	18-06-18		**TLM1,TLM2**	CO1	T1	
5.	Electronic Commerce-Frame work	1	19-06-18		**TLM1,TLM2**	CO1	T1	
6.	Anatomy of E-Commerce applications	1	20-06-18		**TLM1,TLM2**	CO1	T1	
7.	Features of e-commerce	1	23-06-18		**TLM1,TLM2**	CO1	T1	
8.	Functions of e-commerce	1	25-06-18		**TLM1,TLM2**	CO1	T1	
9.	E-commerce practices	1	26-06-18		**TLM1,TLM1**	CO1	T1	
10.	Traditional Practices	1	27-06-18		**TLM1,TLM2**	CO1	T1	
11.	scope and limitations of e-commerce	1	30-06-18		**TLM1,TLM2**	CO1	T1	
12.	**Quiz-1**	1	02-07-18		**TLM6**	CO1	T1	
13.	**Assignment Test-1**	1	03-07-18		**TLM6**	CO1	T1	
14.	**Tutorial Class-1**	1	04-07-18		**TLM3**	CO1	T1	
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Introduction to UNIT-II	1	07-07-18		**TLM1**	CO2	T1	
16.	Business Model for E-Commerce	1	09-07-18		**TLM1,TLM2**	CO2	T1	
17.	B2B, B2C, C2C, C2B	1	10-07-18		**TLM1,TLM2**	CO2	T1	
18.	Inter Organizational Commerce - EDI, EDI Implementation	1	11-07-18		**TLM1,TLM2**	CO2	T1	
19.	Value added networks	1	14-07-18		**TLM1,TLM2**	CO2	T1	
20.	Intra Organizational Commerce - work Flow	1	16-07-18		**TLM1,TLM2**	CO2	T1	
21.	Automation	1	17-07-18		**TLM1,TLM2**	CO2	T1	
22.	Customization and internal Commerce	1	18-07-18		**TLM1,TLM2**	CO2	T1	
23.	Supply chain	1	21-07-18		**TLM1,TLM2**	CO2	T1	

	Management.							
24.	**Quiz-2**	1	23-07-18		**TLM6**	CO2	T1	
25.	**Assignment Test-2**	1	24-07-18		**TLM6**	CO2	T1	
26.	**Tutorial Class-2**	1	25-07-18		**TLM3**	CO2	T1	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
27.	Introduction to UNIT-III	1	28-07-18		**TLM1**	CO3	T2	
28.	Modes of Electronic Commerce: Electronic Data Interchange	1	30-07-18		**TLM1,TLM2**	CO3	T2	
29.	Electronic Commerce with www/Internet	1	31-07-18		**TLM1,TLM2**	CO3	T2	
30.	Commerce Net Advocacy, web Commerce Going Forward	1	01-08-18		**TLM1,TLM2**	CO3	T2	
31.	Approaches to Safe Electronic Commerce: Secure Transport Protocols	1	04-08-18		**TLM1,TLM2**	CO3	T2	
32.	Secure Transactions, Secure Electronic Payment Protocol (SEPP)	1	06-08-18		**TLM1,TLM2**	CO3	T2	
33.	Secure Electronic Transaction (SET)	1	07-08-18		**TLM1,TLM2**	CO3	T1	
34.	Certificates for authentication Security	1	08-08-18		**TLM1,TLM2**	CO3	T1	
35.	Web Servers and Enterprise Networks.	1	11-08-18		**TLM1,TLM2**	CO3	T2	
36.	**Quiz-3**	1	21-08-18		**TLM6**	CO3	T2	
37.	**Assignment Test-3**	1	25-08-18		**TLM6**	CO3	T2	
38.	**Tutorial Class-3**	1	27-08-18		**TLM3**	CO3	T2	
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	Learning Outcome COs	Text Book followed	HOD Sign Weekly
39.	Electronic payment systems	1	28-08-18		**TLM1**	CO4	T2	
40.	Digital Token-Based	1	29-08-18		**TLM1,TLM2**	CO4	T2	
41.	Smart Cards, Credit Cards	1	03-09-18		**TLM1,TLM2**	CO4	T2	
42.	Risks in Electronic Payment systems	1	04-09-18		**TLM1,TLM2**	CO4	T2	
43.	Security of e-commerce	1	05-09-18		**TLM1,TLM2**	CO4	T2	
44.	Setting up Internet security	1	08-09-18		**TLM1,TLM2**	CO4	T2	
45.	Security of e-commerce	1	10-09-18		**TLM1,TLM2**	CO4	T2	

46.	Encryption	1	11-09-18		**TLM1,TLM2**	CO4	T2	
47.	Digital signature	1	12-09-18		**TLM1,TLM2**	CO4	T2	
48.	Digital signature	1	15-09-18		**TLM1,TLM2**	CO4	T2	
49.	Methods of Digital Signature	1	17-09-18		**TLM1,TLM2**	CO4	T2	
50.	Other Security Measures	1	18-09-18		**TLM1,TLM2**	CO4	T2	
51.	Discussion on Security Measures.	1	19-09-18		**TLM1,TLM2**	CO4	T2	
52.	**Quiz-4**	1	22-09-18		**TLM6**	CO4	T2	
53.	**Assignment Test-4**	1	24-09-18		**TLM6**	CO4	T2	
54.	**Tutorial Class-4**	1	25-09-18		**TLM3**	CO4	T2	
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	Learning Outcome COs	Text Book followed	HOD Sign Weekly
55.	Introduction to UNIT-V	1	26-09-18		**TLM1**	CO5	T2	
56.	Internet Resources for Commerce: Introduction, Technologies for web Servers, Internet Tools Relevant to Commerce	1	29-09-18		**TLM1,TLM2**	CO5	T2	
57.	Internet Applications for Commerce, Internet Charges, Internet Access and Architecture	1	01-10-18		**TLM1,TLM2**	CO5	T2	
58.	Searching the Internet. Advertising on Internet: Issues and Technologies	1	03-10-18		**TLM1,TLM2**	CO5	T2	
59.	Advertising on the Web, Marketing creating web site, Electronic Publishing Issues	1	06-10-18		**TLM1,TLM2**	CO5	T2	
60.	Approaches and Technologies: EP and web based EP	1	08-10-18		**TLM1,TLM2**	CO5	T2	
61.	**Quiz-5**	1	09-10-18		**TLM6**	CO5	T2	
62.	**Assignment Test-5**	1	10-10-18		**TLM6**	CO5	T2	
63.	**Tutorial Class-5**	1	13-10-18		**TLM3**	CO5	T2	
64.	Revision-1	1	22-10-18		**TLM1,TLM2**	CO5	T1	
65.	Revision-2	1	23-10-18		**TLM1,TLM2**	CO5	T1	
66.	Revision-3	1	24-10-18		**TLM1,TLM2**	CO5	T1,T2	
67.	Revision-4 & Revision-5	1	27-10-18		**TLM1,TLM2**	CO5	T2	
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
68.	Computer Networks	1	11-06-18		**TLM1**			

69.	Business Commerce	1	12-06-18		**TLM1**			
70.	Information Security and Privacy	1	13-06-18		**TLM1**			

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

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

and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms:

To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering:

To inculcate an ability to Analyze, Design and implement data driven applications into the students.

3. Software Engineering:

Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

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

HOD

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L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

PROGRAM : B. Tech., VII-Sem., CSE
ACADEMIC YEAR : 2018-19
COURSE NAME & CODE : E-COMMERCE – S205
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : **Mr. CH.SRINIVASA RAO**
COURSE COORDINATOR : **Mr. CH.SRINIVASA RAO**
PRE-REQUISITE: Knowledge of security concepts and also networking.

COURSE OBJECTIVE:

- Understanding of a broad range of Internet tools.
- Business models and applications and Benefits and risks

COURSE OUTCOMES (CO)

CO1: Evaluate electronic commerce frame work, features and functions of E-commerce.
CO2: Analyze Business model for e-commerce, Inter organizational, Intra organizational commerce and supply chain management
CO3: Analyze modes of electronic commerce and Identify approaches for secure electronic commerce.
CO4: Categorize electronic payment systems and evaluate security of e-commerce.
CO5: Explore various approaches and technologies used in business over the internet.

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

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T2 Daniel Minoli, Emma Minoli,Web Commerce Technology Handbook,TMH

BOS APPROVED REFERENCE:

R1 Bharat Bhasker, Electronic Commerce -Framework, technologies and Applications - TMH Publications.
R2 Joseph PT: e-Commerce –A Managerial Perspective (PHI) & TMH.
R3 Daniel Amor, E Business R (Evolution), Pearson Edude.
R4 Krishnamurthy, E-Commerce Management, Vikas Publishing House. David Whiteley, E-Commerce: Strategy, Technologies and Applications, TMH.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	11-06-18		**TLM1**	CO1	T1	
2.	Course Outcomes	1	12-06-18		**TLM1**	CO1	T1	
3.	Introduction to UNIT-I	1	13-06-18		**TLM1**	CO1	T1	
4.	Overview of Electronic Commerce (EC)	1	16-06-18		**TLM1,TLM2**	CO1	T1	
5.	Electronic Commerce-Frame work	1	18-06-18		**TLM1,TLM2**	CO1	T1	
6.	Anatomy of E-Commerce applications	1	19-06-18		**TLM1,TLM2**	CO1	T1	
7.	Features of e-commerce	1	20-06-18		**TLM1,TLM2**	CO1	T1	
8.	Functions of e-commerce	1	25-06-18		**TLM1,TLM2**	CO1	T1	
9.	E-commerce practices	1	26-06-18		**TLM1,TLM1**	CO1	T1	
10.	Traditional Practices	1	27-06-18		**TLM1,TLM2**	CO1	T1	
11.	scope and limitations of e-commerce	1	30-06-18		**TLM1,TLM2**	CO1	T1	
12.	**Quiz-1**	1	02-07-18		**TLM6**	CO1	T1	
13.	**Assignment Test-1**	1	03-07-18		**TLM6**	CO1	T1	
14.	**Tutorial Class-1**	1	04-07-18		**TLM3**	CO1	T1	
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Introduction to UNIT-II	1	07-07-18		**TLM1**	CO2	T1	
16.	Business Model for E-Commerce		09-07-18		**TLM1,TLM2**	CO2	T1	
17.	B2B, B2C, C2C, C2B		10-07-18		**TLM1,TLM2**	CO2	T1	
18.	Inter Organizational Commerce - EDI, EDI Implementation	1	11-07-18		**TLM1,TLM2**	CO2	T1	
19.	Value added networks	1	14-07-18		**TLM1,TLM2**	CO2	T1	
20.	Intra Organizational Commerce - work Flow	1	16-07-18		**TLM1,TLM2**	CO2	T1	
21.	Automation	1	17-07-18		**TLM1,TLM2**	CO2	T1	
22.	Customization and internal Commerce	1	18-07-18		**TLM1,TLM2**	CO2	T1	
23.	Supply chain		21-07-18		**TLM1,TLM2**	CO2	T1	

	Management.							
24.	**Quiz-2**	1	23-07-18		**TLM6**	CO2	T1	
25.	**Assignment Test-2**	1	24-07-18		**TLM6**	CO2	T1	
26.	**Tutorial Class-2**	1	25-07-18		**TLM3**	CO2	T1	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
27.	Introduction to UNIT-III	1	28-07-18		**TLM1**	CO3	T2	
28.	Modes of Electronic Commerce: Electronic Data Interchange	1	30-07-18		**TLM1,TLM2**	CO3	T2	
29.	Electronic Commerce with www/Internet	1	31-07-18		**TLM1,TLM2**	CO3	T2	
30.	Commerce Net Advocacy, web Commerce Going Forward	1	01-08-18		**TLM1,TLM2**	CO3	T2	
31.	Approaches to Safe Electronic Commerce: Secure Transport Protocols	1	02-08-18		**TLM1,TLM2**	CO3	T2	
32.	Secure Transactions, Secure Electronic Payment Protocol (SEPP)	1	04-08-18		**TLM1,TLM2**	CO3	T2	
33.	Secure Electronic Transaction (SET)	1	06-08-18		**TLM1,TLM2**	CO3	T1	
34.	Certificates for authentication Security	1	07-08-18		**TLM1,TLM2**	CO3	T1	
35.	Web Servers and Enterprise Networks.	1	08-08-18		**TLM1,TLM2**	CO3	T2	
36.	**Quiz-3**	1	21-08-18		**TLM6**	CO3	T2	
37.	**Assignment Test-3**	1	25-08-18		**TLM6**	CO3	T2	
38.	**Tutorial Class-3**	1	27-08-18		**TLM3**	CO3	T2	
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	Learning Outcome COs	Text Book followed	HOD Sign Weekly
39.	Electronic payment systems	1	28-08-18		**TLM1**	CO4	T2	
40.	Digital Token-Based	1	29-08-18		**TLM1,TLM2**	CO4	T2	
41.	Smart Cards, Credit Cards	1	01-09-18		**TLM1,TLM2**	CO4	T2	
42.	Risks in Electronic Payment systems	1	03-09-18		**TLM1,TLM2**	CO4	T2	
43.	Security of e-commerce	1	04-09-18		**TLM1,TLM2**	CO4	T2	
44.	Setting up Internet security	1	05-09-18		**TLM1,TLM2**	CO4	T2	
45.	Security of e-commerce	1	08-09-18		**TLM1,TLM2**	CO4	T2	

46.	Encryption	1	10-09-18		**TLM1,TLM2**	CO4	T2	
47.	Digital signature	1	11-09-18		**TLM1,TLM2**	CO4	T2	
48.	Digital signature	1	12-09-18		**TLM1,TLM2**	CO4	T2	
49.	Methods of Digital Signature	1	15-09-18		**TLM1,TLM2**	CO4	T2	
50.	Other Security Measures	1	17-09-18		**TLM1,TLM2**	CO4	T2	
51.	Discussion on Security Measures.	1	18-09-18		**TLM1,TLM2**	CO4	T2	
52.	**Quiz-4**	1	19-09-18		**TLM6**	CO4	T2	
53.	**Assignment Test-4**	1	22-09-18		**TLM6**	CO4	T2	
54.	**Tutorial Class-4**	1	24-09-18		**TLM3**	CO4	T2	
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	Learning Outcome COs	Text Book followed	HOD Sign Weekly
55.	Introduction to UNIT-V	1	25-09-18		**TLM1**	CO5	T2	
56.	Internet Resources for Commerce: Introduction, Technologies for web Servers, Internet Tools Relevant to Commerce	1	26-09-18		**TLM1,TLM2**	CO5	T2	
57.	Internet Applications for Commerce, Internet Charges, Internet Access and Architecture	1	01-10-18		**TLM1,TLM2**	CO5	T2	
58.	Searching the Internet. Advertising on Internet: Issues and Technologies	1	02-10-18		**TLM1,TLM2**	CO5	T2	
59.	Advertising on the Web, Marketing creating web site, Electronic Publishing Issues	1	03-10-18		**TLM1,TLM2**	CO5	T2	
60.	Approaches and Technologies: EP and web based EP	1	06-10-18		**TLM1,TLM2**	CO5	T2	
61.	**Quiz-5**	1	08-10-18		**TLM6**	CO5	T2	
62.	**Assignment Test-5**	1	09-10-18		**TLM6**	CO5	T2	
63.	**Tutorial Class-5**	1	10-10-18		**TLM3**	CO5	T2	
64.	Revision-1	1	15-10-18		**TLM1,TLM2**	CO5	T1	
65.	Revision-2	1	16-10-18		**TLM1,TLM2**	CO5	T1	
66.	Revision-3	1	17-10-18		**TLM1,TLM2**	CO5	T1,T2	
67.	Revision-4 & Revision-5	1	20-10-18		**TLM1,TLM2**	CO5	T2	
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
68.	Computer Networks	1	22-10-18		**TLM1**			

69.	Business Commerce	1	23-10-18		**TLM1**			
70.	Information Security and Privacy	1	24-10-18		**TLM1**			

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

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

mathematics, natural sciences, and engineering sciences.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms:

To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering:

To inculcate an ability to Analyze, Design and implement data driven applications into the students.

3. Software Engineering:

Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

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

HOD

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

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : **C# AND .NET Programming** – S153

L-T-P STRUCTURE : 3-1-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : N. SRINIVASARAO

COURSE COORDINATOR : N. SRINIVASARAO

PRE-REQUISITE: C, C++, JAVA Languages

COURSE OBJECTIVE: This course will cover the practical aspects of multi-tier application development using the .NET framework. The goal of this course is to introduce the basics of distributed application development. Technologies covered include the Common Language Runtime (CLR), .NET framework classes, C#, ASP.NET, and ADO.NET.

COURSE OUTCOMES (CO)

CO1: Identify the basic constructs of C# and .NET Framework with a view of using them in problem solving.

CO2: Apply object oriented features of C# to solve real world problems.

CO3: Demonstrate the usage of ADO.NET to create window applications for database access.

CO4: Design ASP.NET web applications to create user friendly environment.

CO5: Analyze the features like security, assemblies and CLR in .NET framework.

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

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

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

BOS APPROVED TEXT BOOKS:

T1	Herbert Schildt, "The Complete Reference: C# 4.0", TMH, 2012.
T2	Christian Nagel et al. "Professional C# 2012 with .NET 4.5", Wiley India, 2012.

BOS APPROVED REFERENCE BOOKS:

R1	Andrew Troelsen , "Pro C# 2010 and the .NET 4 Platform", Fifth edition, A Press, 2010.
R2	Ian Griffiths, Matthew Adams, Jesse Liberty, "Programming C# 4.0", O_Reilly,6 th Edition 2010.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I: INTRODUCTION TO C#

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Understanding .NET Framework	1	11/06/18		TLM1	CO1	T1, R1	
2.	Introduction, Overview of C#	1	13/06/18		TLM1	CO1	T1, R1	
3.	Literals, Variables, Data Types	1	14/06/18		TLM1, TLM5	CO1	T1, R1	
4.	Operators, checked and unchecked operators	1	15/06/18		TLM1, TLM5	CO1	T1, R1	
5.	Expressions, Branching	1	18/06/18		TLM1, TLM5	CO1	T1, R1	
6.	Looping Statements	1	20/06/18		TLM1, TLM5	CO1	T1, R1	
7.	implicit and explicit casting	1	21/06/18		TLM1, TLM5	CO1	T1, R1	
8.	Constant, Arrays	1	22/06/18		TLM1, TLM5	CO1	T1, R1	
9.	Array Class, Array List	1	25/06/18		TLM1, TLM5	CO1	T1, R1	
10.	String, String Builder	1	27/06/18		TLM1, TLM5	CO1	T1, R1	
11.	Structure, Enumerations	1	28/06/18		TLM1, TLM5	CO1	T1, R1	
12.	Boxing and unboxing.	1	29/06/18		TLM1, TLM5	CO1	T1, R1	
13.	TUTORIAL - 1	1	02/07/18		TLM3	CO1	---	
14.	Assignment/Quiz-1	1	04/07/18		TLM6	CO1	---	
No. of classes required to complete UNIT-I		14	No. of classes taken:					

UNIT-II: OBJECT ORIENTED ASPECTS OF C#

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Class, Objects	1	05/07/18		TLM1, TLM5	CO2	T1, R1	
16.	Constructors and its types	1	06/07/18		TLM1, TLM5	CO2	T1, R1	
17.	Inheritance, properties, indexers	1	09/07/18		TLM1, TLM5	CO2	T1, R1	
18.	Index overloading, polymorphism	1	11/07/18		TLM1, TLM5	CO2	T1, R1	
19.	sealed class and methods	1	12/07/18		TLM1, TLM5	CO2	T1, R1	

20.	interface, abstract class	1	13/07/18		TLM1, TLM5	CO2	T1, R1	
21.	operator overloading	1	16/07/18		TLM1, TLM5	CO2	T1, R1	
22.	delegates, events	1	18/07/18		TLM1, TLM5	CO2	T1, R1	
23.	errors and exception	1	19/07/18		TLM1, TLM5	CO2	T1, R1	
24.	Threading.	1	20/07/18		TLM1, TLM5	CO2	T1, R1	
25.	TUTORIAL-2	1	23/07/18		TLM3	CO2	---	
26.	Assignment/Quiz-2	1	25/07/18		TLM6	CO2	---	
No.of classes required to complete UNIT-II		12	No. of classes taken:					

UNIT-III: APPLICATION DEVELOPMENT ON .NET

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
27.	Building windows application	1	26/07/18		TLM1, TLM5	CO3	T1, R2	
28.	Creating our own window forms	1	27/07/18		TLM1, TLM5	CO3	T1, R2	
29.	window forms with events and controls	1	20/08/18		TLM1, TLM5	CO3	T1, R2	
30.	menu creation, inheriting window forms	1	23/08/18		TLM1, TLM5	CO3	T1, R2	
31.	SDI and MDI application	1	24/08/18		TLM1, TLM5	CO3	T1, R2	
32.	Dialog Box (Modal and Modeless)	1	27/08/18		TLM1, TLM5	CO3	T1, R2	
33.	accessing data with ADO.NET	1	29/08/18		TLM1, TLM5	CO3	T1, R2	
34.	DataSet, typed dataset and Data Adapter	1	30/08/18		TLM1, TLM5	CO3	T1, R2	
35.	Updating database using stored procedures	1	31/08/18		TLM1, TLM5	CO3	T1, R2	
36.	SQL Server with ADO.NET	1	05/09/18		TLM1, TLM5	CO3	T1, R2	
37.	handling exceptions, validating controls and Windows application configuration	1	06/09/18		TLM1, TLM5	CO3	T1, R2	
38.	TUTORIAL-3	1	07/09/18		TLM3	CO3	---	
39.	Assignment/Quiz-3	1	10/09/18		TLM6	CO3	---	
No. of classes required to complete UNIT-III		13	No. of classes taken:					

UNIT-IV: WEB BASED APPLICATION DEVELOPMENT ON .NET

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
40.	Programming web application with web forms, ASP.NET introduction.	1	12/09/18		TLM1, TLM5	CO4	T1, R2	
41.	working with XML and .NET	1	13/09/18		TLM1, TLM5	CO4	T1, R2	
42.	Creating Virtual Directory and Web Application	1	14/09/18		TLM1, TLM5	CO4	T1, R2	
43.	session management techniques, web.config	1	17/09/18		TLM1, TLM5	CO4	T1, R2	

44.	web services, passing datasets	1	19/09/18		TLM1, TLM5	CO4	T1, R2	
45.	returning datasets from web services	1	20/09/18		TLM1, TLM5	CO4	T1, R2	
46.	handling transaction	1	24/09/18		TLM1, TLM5	CO4	T1, R2	
47.	handling exceptions		26/09/18		TLM1, TLM5	CO4	T1, R2	
48.	returning exceptions from SQL Server	1	27/09/18		TLM1, TLM5	CO4	T1, R2	
49.	TUTORIAL-4	1	28/09/18		TLM3	CO4	---	
50.	Assignment/Quiz-4	1	01/10/18		TLM6	CO4	---	
No. of classes required to complete UNIT-IV		11	No. of classes taken:					

UNIT-V: Swings & Struts Framework

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
51.	Assemblies	1	03/10/18		TLM1, TLM5	CO5	T1, R1	
52.	Versioning, Attributes	1	04/10/18		TLM1, TLM5	CO5	T1, R1	
53.	reflection	1	05/10/18		TLM1, TLM5	CO5	T1, R1	
54.	viewing meta data	1	08/10/18		TLM1, TLM5	CO5	T1, R1	
55.	type discovery	1	10/10/18		TLM1, TLM5	CO5	T1, R1	
56.	Reflection on type	1	11/10/18		TLM1, TLM5	CO5	T1, R1	
57.	marshalling, remoting	1	12/10/18		TLM1, TLM5	CO5	T1, R1	
58.	security in NET	1	22/10/18		TLM1, TLM5	CO5	T1, R1	
59.	TUTORIAL-5	1	24/10/18		TLM3	CO5	---	
60.	Assignment/Quiz-5	1	25/10/18		TLM6	CO5	---	
No. of classes required to complete UNIT-V		10	No. of classes taken:					

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
61.								
62.								

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions + CRT Classes	11-06-2018	11-08-2018	7 W + 2 W
I Mid Examinations	13-08-2018	18-08-2018	1 W
II Phase of Instructions + CRT Classes	20-08-2018	27-10-2018	9 W +1W
II Mid Examinations	29-10-2018	03-11-2018	1 W
Preparation and Practicals	05-11-2018	17-11-2018	2 W
Semester End Examinations	19-11-2018	01-12-2018	2 W

EVALUATION PROCESS:

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

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

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

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : **C# AND .NET Programming** – S153

L-T-P STRUCTURE : 3-1-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : N. SRINIVASARAO

COURSE COORDINATOR : N. SRINIVASARAO

PRE-REQUISITE: C, C++, JAVA Languages

COURSE OBJECTIVE: This course will cover the practical aspects of multi-tier application development using the .NET framework. The goal of this course is to introduce the basics of distributed application development. Technologies covered include the Common Language Runtime (CLR), .NET framework classes, C#, ASP.NET, and ADO.NET.

COURSE OUTCOMES (CO)

CO1: Identify the basic constructs of C# and .NET Framework with a view of using them in problem solving.

CO2: Apply object oriented features of C# to solve real world problems.

CO3: Demonstrate the usage of ADO.NET to create window applications for database access.

CO4: Design ASP.NET web applications to create user friendly environment.

CO5: Analyze the features like security, assemblies and CLR in .NET framework.

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

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

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

BOS APPROVED TEXT BOOKS:

T1	Herbert Schildt, "The Complete Reference: C# 4.0", TMH, 2012.
T2	Christian Nagel et al. "Professional C# 2012 with .NET 4.5", Wiley India, 2012.

BOS APPROVED REFERENCE BOOKS:

R1	Andrew Troelsen , "Pro C# 2010 and the .NET 4 Platform", Fifth edition, A Press, 2010.
R2	Ian Griffiths, Matthew Adams, Jesse Liberty, "Programming C# 4.0", O_Reilly,6 th Edition 2010.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT-I: INTRODUCTION TO C#

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Understanding .NET Framework	1	11/06/18		TLM1	CO1	T1, R1	
2.	Introduction, Overview of C#	1	12/06/18		TLM1	CO1	T1, R1	
3.	Literals, Variables, Data Types	1	14/06/18		TLM1, TLM5	CO1	T1, R1	
4.	Operators, checked and unchecked operators	1	15/06/18		TLM1, TLM5	CO1	T1, R1	
5.	Expressions, Branching	1	18/06/18		TLM1, TLM5	CO1	T1, R1	
6.	Looping Statements	1	19/06/18		TLM1, TLM5	CO1	T1, R1	
7.	implicit and explicit casting	1	21/06/18		TLM1, TLM5	CO1	T1, R1	
8.	Constant, Arrays	1	22/06/18		TLM1, TLM5	CO1	T1, R1	
9.	Array Class, Array List	1	25/06/18		TLM1, TLM5	CO1	T1, R1	
10.	String, String Builder	1	26/06/18		TLM1, TLM5	CO1	T1, R1	
11.	Structure, Enumerations	1	28/06/18		TLM1, TLM5	CO1	T1, R1	
12.	Boxing and unboxing.	1	29/06/18		TLM1, TLM5	CO1	T1, R1	
13.	TUTORIAL - 1	1	02/07/18		TLM3	CO1	---	
14.	Assignment/Quiz-1	1	03/07/18		TLM6	CO1	---	
No. of classes required to complete UNIT-I		14	No. of classes taken:					

UNIT-II: OBJECT ORIENTED ASPECTS OF C#

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Class, Objects	1	05/07/18		TLM1, TLM5	CO2	T1, R1	
16.	Constructors and its types	1	06/07/18		TLM1, TLM5	CO2	T1, R1	
17.	Inheritance, properties, indexers	1	09/07/18		TLM1, TLM5	CO2	T1, R1	
18.	Index overloading, polymorphism	1	10/07/18		TLM1, TLM5	CO2	T1, R1	
19.	sealed class and methods	1	12/07/18		TLM1, TLM5	CO2	T1, R1	

20.	interface, abstract class	1	13/07/18		TLM1, TLM5	CO2	T1, R1	
21.	operator overloading	1	16/07/18		TLM1, TLM5	CO2	T1, R1	
22.	delegates, events	1	17/07/18		TLM1, TLM5	CO2	T1, R1	
23.	errors and exception	1	19/07/18		TLM1, TLM5	CO2	T1, R1	
24.	Threading.	1	20/07/18		TLM1, TLM5	CO2	T1, R1	
25.	TUTORIAL-2	1	23/07/18		TLM3	CO2	---	
26.	Assignment/Quiz-2	1	24/07/18		TLM6	CO2	---	
No.of classes required to complete UNIT-II		12	No. of classes taken:					

UNIT-III: APPLICATION DEVELOPMENT ON .NET

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
27.	Building windows application	1	26/07/18		TLM1, TLM5	CO3	T1, R2	
28.	Creating our own window forms	1	27/07/18		TLM1, TLM5	CO3	T1, R2	
29.	window forms with events and controls	1	20/08/18		TLM1, TLM5	CO3	T1, R2	
30.	menu creation, inheriting window forms	1	21/08/18		TLM1, TLM5	CO3	T1, R2	
31.	SDI and MDI application	1	24/08/18		TLM1, TLM5	CO3	T1, R2	
32.	Dialog Box (Modal and Modeless)	1	27/08/18		TLM1, TLM5	CO3	T1, R2	
33.	accessing data with ADO.NET	1	28/08/18		TLM1, TLM5	CO3	T1, R2	
34.	DataSet, typed dataset and Data Adapter	1	30/08/18		TLM1, TLM5	CO3	T1, R2	
35.	Updating database using stored procedures	1	31/08/18		TLM1, TLM5	CO3	T1, R2	
36.	SQL Server with ADO.NET	1	04/09/18		TLM1, TLM5	CO3	T1, R2	
37.	handling exceptions, validating controls and Windows application configuration	1	06/09/18		TLM1, TLM5	CO3	T1, R2	
38.	TUTORIAL-3	1	07/09/18		TLM3	CO3	---	
39.	Assignment/Quiz-3	1	10/09/18		TLM6	CO3	---	
No. of classes required to complete UNIT-III		13	No. of classes taken:					

UNIT-IV: WEB BASED APPLICATION DEVELOPMENT ON .NET

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
40.	Programming web application with web forms, ASP.NET introduction.	1	11/09/18		TLM1, TLM5	CO4	T1, R2	
41.	working with XML and .NET	1	13/09/18		TLM1, TLM5	CO4	T1, R2	
42.	Creating Virtual Directory and Web Application	1	14/09/18		TLM1, TLM5	CO4	T1, R2	
43.	session management techniques, web.config	1	17/09/18		TLM1, TLM5	CO4	T1, R2	

44.	web services, passing datasets	1	18/09/18		TLM1, TLM5	CO4	T1, R2	
45.	returning datasets from web services	1	20/09/18		TLM1, TLM5	CO4	T1, R2	
46.	handling transaction	1	24/09/18		TLM1, TLM5	CO4	T1, R2	
47.	handling exceptions		25/09/18		TLM1, TLM5	CO4	T1, R2	
48.	returning exceptions from SQL Server	1	27/09/18		TLM1, TLM5	CO4	T1, R2	
49.	TUTORIAL-4	1	28/09/18		TLM3	CO4	---	
50.	Assignment/Quiz-4	1	01/10/18		TLM6	CO4	---	
No. of classes required to complete UNIT-IV		11	No. of classes taken:					

UNIT-V: Swings & Struts Framework

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
51.	Assemblies	1	04/10/18		TLM1, TLM5	CO5	T1, R1	
52.	Versioning, Attributes	1	05/10/18		TLM1, TLM5	CO5	T1, R1	
53.	reflection	1	08/10/18		TLM1, TLM5	CO5	T1, R1	
54.	viewing meta data	1	09/10/18		TLM1, TLM5	CO5	T1, R1	
55.	type discovery	1	11/10/18		TLM1, TLM5	CO5	T1, R1	
56.	Reflection on type	1	12/10/18		TLM1, TLM5	CO5	T1, R1	
57.	marshalling, remoting	1	22/10/18		TLM1, TLM5	CO5	T1, R1	
58.	security in NET	1	23/10/18		TLM1, TLM5	CO5	T1, R1	
59.	TUTORIAL-5	1	25/10/18		TLM3	CO5	---	
60.	Assignment/Quiz-5	1	26/10/18		TLM6	CO5	---	
No. of classes required to complete UNIT-V		10	No. of classes taken:					

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
61.								
62.								

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions + CRT Classes	11-06-2018	11-08-2018	7 W + 2 W
I Mid Examinations	13-08-2018	18-08-2018	1 W
II Phase of Instructions + CRT Classes	20-08-2018	27-10-2018	9 W +1W
II Mid Examinations	29-10-2018	03-11-2018	1 W
Preparation and Practicals	05-11-2018	17-11-2018	2 W
Semester End Examinations	19-11-2018	01-12-2018	2 W

EVALUATION PROCESS:

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

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

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

COURSE HANDOUT

Part-A

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : Design Patterns S186

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **G.V.Suresh**

COURSE COORDINATOR : **G.V.Suresh**

PRE-REQUISITES: Knowledge of Unified modeling language.

COURSE EDUCATIONAL OBJECTIVES (CEOs) :

CEO1: To understand that design patterns are standard solutions to common software design problems.

CEO2: To be able to use systematic approach that focus and describe abstract systems of interaction between classes, objects, and communication flow.

COURSE OUTCOMES (COs)

CO1:	Identify the design patterns to solve object oriented design problems
CO2:	Analyze and combine design patterns to work together in software design process
CO3:	construct software systems and components using design pattern (catalog's)
CO4:	implement creational patterns (Singleton, Factory, Abstract Factory), structural patterns for given applications
CO5:	Evaluate design solutions by using behavioral patterns

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

BOS APPROVED TEXT BOOKS:

T1 Design Patterns by Erich Gamma Pearson Education.

T2 Head first Design Patterns by Eric Freeman-Orielly-SPD.

BOS APPROVED REFERENCE BOOKS:

R1 Pattern's in JAVA VOL I by Mark Grand Wiley Dream Tech.

R2 Design Patterns Explained by Ahalloway Pearson Education.

Part-B

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

UNIT-I : Introduction

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	12-6-2018					
2.	Course Outcomes	1	13-6-2018					
3.	**Introduction to UNIT-I**	1	14-6-2018					
4.	What is Design pattern?	1	19-6-2018					
5.	Design patterns in Smalltalk MVC	1	20-6-2018					
6.	Describing Design Patterns	1	21-6-2018					
7.	Describing Design patterns	1	23-6-2018					
8.	The catalog of Design patterns	1	26-6-2018					
9.	Organizing the catalog	1	27-6-2018					
10.	**TUTORIAL-I**	1	28-6-2018					
11.	How design patterns solve design problems	1	30-6-2018					
12.	How design patterns solve design problems	1	3-7-2018					
13.	How to select a design pattern	1	4-7-2018					
14.	How to select a design pattern	1	5-7-2018					
15.	How to use a design pattern.	1	10-7-2018					
16.	How to use a design pattern.	1	11-7-2018					
17.	**TUTORIAL-II**	1	12-7-2018					
18.	Revision	1	14-7-2018					

No. of classes required to complete UNIT-I	7	No. of classes taken:

UNIT-II : A Case Study

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
19.	Designing a document editor:	1	17-7-2018					
20.	Design problems	1	18-7-2018					
21.	Document structure	1	19-7-2018					
22.	Formatting	1	21-7-2018					
23.	**TUTORIAL-III**	1	24-7-2018					
24.	Supporting multiple look-and-feel standards	1	25-7-2018					
25.	Supporting multiple look-and-feel standards	1	26-7-2018					
26.	Supporting multiple window systems	1	28-7-2018					
27.	User operations		31-7-2018					
28.	User operations	1	1-8-2018					
29.	**TUTORIAL-IV**	1	2-8-2018					
30.	Spelling Checking	1	4-8-2018					
31.	Spelling Checking	1	7-8-2018					
32.	Hyphenation Summary	1	8-8-2018					
33.	**TUTORIAL-V**	1	9-8-2018					
34.	**Revision**		11-8-2018					
I mid examinations from 13/8/2018 to 18/8/2018								
No. of classes required to complete UNIT-II				No. of classes taken:				

UNIT-III : Creational Patterns

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

						COs		
35.	Abstract Factory	1	21-8-2018					
36.	Builder.	1	23-8-2018					
37.	Factory Method: Intent, also Known as, Motivation,	1	25-8-2018					
38.	Applicability , Structure, Collaboratio ns.	1	28-8-2018					
39.	**TUTORIAL-6**	1	29-8-2018					
40.	Prototype ,singleton	1	30-8-2018					
41.	Discussion on creational patterns	1	4-9-2018					
42.	**Structural pattern part –I:**Adapter	1	5-9-2018					
43.	Bridge	1	6-9-2018					
44.	**TUTORIAL-7**	1	8-9-2018					
45.	Composite.	1	11-9-2018					
46.	**Structural pattern part –II:** Decorator	1	12-9-2018					
47.	Facade	1	15-9-2018					
48.	Flyweight, Proxy	1	16-9-2018					
49.	**TUTORIAL-8**	1	18-9-2018					
No. of classes required to complete UNIT-III					No. of classes taken:			

UNIT-IV : Behavioral Pattern Part-I, Behavioral Pattern Part-II

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
50.	Behavioral pattern part – I:	1	18-9-2018					
51.	Chain of Responsibility	1	19-9-2018					
52.	Command	1						
53.	**TUTORIAL-9**	1	20-9-2018					
54.	Interpreter	1	22-9-2018					

55.	Iterator	1	25-9-2018					
56.	Behavioral pattern part – II:	1	26-9-2018					
57.	Mediator	1	27-9-2018					
58.	Observer	1	29-9-2018					
59.	**TUTORIAL-10**	1	3-10-2018					
60.	Observer	1	4-10-2018					
61.	State	1	6-10-2018					
62.	Strategy	1	9-10-2018					
63.	Template Method	1	10-10-2018					
64.	Visitor	1	11-10-2018					
65.	**TUTORIAL-11**	1	13-10-2018					
No. of classes required to complete UNIT-IV					No. of classes taken:			

UNIT-V : What to Expect from Design Pattern

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
66.	What to expect from Design patters,	1	16-10-2018					
67.	A brief history	1	20-10-2018					
68.	The pattern community	1	20-10-2018					
69.	**TUTORIAL-12**	1	23-10-2018					
70.	An invitation	1	23-10-2018					
71.	A pattern thought	1	24-10-2018					
72.	**TUTORIAL-13**	1	24-10-2018					
73.	Revision	1	25-10-2018					
74.	Revision	1	25-10-2018					
75.	**TUTORIAL-14**	1	27-10-2018					
No. of classes required to complete UNIT-V					No. of classes taken:			
II mid examinations from 29/10/2018 to 11/3/2018								

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
76.								
77.								
78.								

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

Part - C

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

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

member and leader in a team, to manage projects and in multidisciplinary environments.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms: To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering: To inculcate an ability to Analyze, Design and implement data driven applications into the students.

3. Software Engineering: Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

G V Suresh	**G.V.Suresh**	**Dr.Ch.V.Narayana Reddy**	**Dr.Ch.V.Narayana Reddy**
Course Instructor	Course Coordinator	Module Coordinator	HOD

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L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

Part-A

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : Design Patterns S186

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **M.Sri Bala**

COURSE COORDINATOR : **G.V.Suresh**

PRE-REQUISITES: Knowledge of Unified modeling language.

COURSE EDUCATIONAL OBJECTIVES (CEOs) :

CEO1: To understand that design patterns are standard solutions to common software design problems.

CEO2: To be able to use systematic approach that focus and describe abstract systems of interaction between classes, objects, and communication flow.

COURSE OUTCOMES (COs)

CO1:	Identify the design patterns to solve object oriented design problems
CO2:	Analyze and combine design patterns to work together in software design process
CO3:	construct software systems and components using design pattern (catalog's)
CO4:	implement creational patterns (Singleton, Factory, Abstract Factory), structural patterns for given applications
CO5:	Evaluate design solutions by using behavioral patterns

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

BOS APPROVED TEXT BOOKS:

T1 Design Patterns by Erich Gamma Pearson Education.

T2 Head first Design Patterns by Eric Freeman-Orielly-SPD.

BOS APPROVED REFERENCE BOOKS:

R1 Pattern's in JAVA VOL I by Mark Grand Wiley Dream Tech.

R2 Design Patterns Explained by Ahalloway Pearson Education.

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

UNIT-I : Introduction

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	12-6-2018					
2.	Course Outcomes	1	13-6-2018					
3.	**Introduction to UNIT-I**	1	14-6-2018					
4.	What is Design pattern?	1	19-6-2018					
5.	Design patterns in Smalltalk MVC	1	20-6-2018					
6.	Describing Design Patterns	1	21-6-2018					
7.	Describing Design patterns	1	23-6-2018					
8.	The catalog of Design patterns	1	26-6-2018					
9.	Organizing the catalog	1	27-6-2018					
10.	**TUTORIAL-I**	1	28-6-2018					
11.	How design patterns solve design problems	1	30-6-2018					
12.	How design patterns solve design problems	1	3-7-2018					
13.	How to select a design pattern	1	4-7-2018					
14.	How to select a design pattern	1	5-7-2018					
15.	How to use a design pattern.	1	10-7-2018					
16.	How to use a design pattern.	1	11-7-2018					
17.	**TUTORIAL-II**	1	12-7-2018					
18.	Revision	1	14-7-2018					

No. of classes required to complete UNIT-I	7	No. of classes taken:

UNIT-II : A Case Study

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
19.	Designing a document editor:	1	17-7-2018					
20.	Design problems	1	18-7-2018					
21.	Document structure	1	19-7-2018					
22.	Formatting	1	21-7-2018					
23.	**TUTORIAL-III**	1	24-7-2018					
24.	Supporting multiple look-and-feel standards	1	25-7-2018					
25.	Supporting multiple look-and-feel standards	1	26-7-2018					
26.	Supporting multiple window systems	1	28-7-2018					
27.	User operations		31-7-2018					
28.	User operations	1	1-8-2018					
29.	**TUTORIAL-IV**	1	2-8-2018					
30.	Spelling Checking	1	4-8-2018					
31.	Spelling Checking	1	7-8-2018					
32.	Hyphenation Summary	1	8-8-2018					
33.	**TUTORIAL-V**	1	9-8-2018					
34.	**Revision**		11-8-2018					
I mid examinations from 13/8/2018 to 18/8/2018								
No. of classes required to complete UNIT-II				No. of classes taken:				

UNIT-III : Creational Patterns

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

						COs		
35.	Abstract Factory	1	21-8-2018					
36.	Builder.	1	23-8-2018					
37.	Factory Method: Intent, also Known as, Motivation,	1	25-8-2018					
38.	Applicability , Structure, Collaboratio ns.	1	28-8-2018					
39.	**TUTORIAL-6**	1	29-8-2018					
40.	Prototype ,singleton	1	30-8-2018					
41.	Discussion on creational patterns	1	4-9-2018					
42.	**Structural pattern part –I:**Adapter	1	5-9-2018					
43.	Bridge	1	6-9-2018					
44.	**TUTORIAL-7**	1	8-9-2018					
45.	Composite.	1	11-9-2018					
46.	**Structural pattern part –II:** Decorator	1	12-9-2018					
47.	Facade	1	15-9-2018					
48.	Flyweight, Proxy	1	16-9-2018					
49.	**TUTORIAL-8**	1	18-9-2018					
No. of classes required to complete UNIT-III					No. of classes taken:			

UNIT-IV : Behavioral Pattern Part-I, Behavioral Pattern Part-II

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
50.	Behavioral pattern part – I:	1	18-9-2018					
51.	Chain of Responsibility	1	19-9-2018					
52.	Command	1						
53.	**TUTORIAL-9**	1	20-9-2018					
54.	Interpreter	1	22-9-2018					

55.	Iterator	1	25-9-2018					
56.	Behavioral pattern part – II:	1	26-9-2018					
57.	Mediator	1	27-9-2018					
58.	Observer	1	29-9-2018					
59.	**TUTORIAL-10**	1	3-10-2018					
60.	Observer	1	4-10-2018					
61.	State	1	6-10-2018					
62.	Strategy	1	9-10-2018					
63.	Template Method	1	10-10-2018					
64.	Visitor	1	11-10-2018					
65.	**TUTORIAL-11**	1	13-10-2018					
No. of classes required to complete UNIT-IV					No. of classes taken:			

UNIT-V : What to Expect from Design Pattern

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
66.	What to expect from Design patters,	1	16-10-2018					
67.	A brief history	1	20-10-2018					
68.	The pattern community	1	20-10-2018					
69.	**TUTORIAL-12**	1	23-10-2018					
70.	An invitation	1	23-10-2018					
71.	A pattern thought	1	24-10-2018					
72.	**TUTORIAL-13**	1	24-10-2018					
73.	Revision	1	25-10-2018					
74.	Revision	1	25-10-2018					
75.	**TUTORIAL-14**	1	27-10-2018					
No. of classes required to complete UNIT-V					No. of classes taken:			
II mid examinations from 29/10/2018 to 11/3/2018								

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
76.								
77.								
78.								

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

Part - C

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

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

member and leader in a team, to manage projects and in multidisciplinary environments.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms: To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering: To inculcate an ability to Analyze, Design and implement data driven applications into the students.

3. Software Engineering: Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

M.Sri Bala	**G.V.Suresh**	**Dr.Ch.V.Narayana Reddy**	**Dr.Ch.V.Narayana Reddy**
Course Instructor	Course Coordinator	Module Coordinator	HOD

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : Data Mining and Data Warehousing(DMDW) - S177

L-T-P STRUCTURE : 3-1-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr.A Raja Gopal

COURSE COORDINATOR: Mr.A Raja Gopal

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

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

COURSE OUTCOMES (COs)

CO1: Outline the basic concepts of data warehouse & data mining.

CO2: Apply data pre-processing, generalization and data characterization techniques to provide suitable input for a range of data mining algorithms.

CO3: Analyze and provide solutions for real world problems using mining association techniques.

CO4: Examine the different classification & clustering techniques in data mining.

CO5: Apply data mining techniques to complex data objects like spatial data, multimedia data and web mining.

COURSE ARTICULATION MATRIX (Correlation between Cos-Pos-PSOs):

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

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

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

BOS APPROVED TEXT BOOKS:

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

BOS APPROVED REFERENCE BOOKS:

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

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

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

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

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I : Introduction to Data warehouse

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Data warehouse	1	11/6/2018		**TLM1**	CO1	T1	
2.	Introduction-Data, Info. Importance of DMDW	1	12/6/2018		**TLM1**	CO1	T1	
3.	Data warehouse briefing	1	16/6/2018		**TLM1**	CO1	T1	
4.	Data warehouse Need, OLTP vs OLAP	1	18/6/2018		**TLM1**	CO1	T1	
5.	Multidimensional data mode s	2	19/6/2018 22/6/2018		**TLM1**	CO1	T1	
6.	Concept Hierarchy, OLAP	1	23/6/2018		**TLM2**	CO1	T1	
7.	DWH Architecture	1	25/6/2018		**TLM2**	CO1	R1	
8.	Types of OLAP servers, Meta Data Repository	1	26/6/2018		**TLM2**	CO1	T1	
9.	DWH Implementation	1	29/6/2018		**TLM1**	CO1	T1	
10.	Further Development, DWH to Data Mining	1	30/6/2018		**TLM1**	CO1	T1	
11.	Introduction to data mining	2	2/7/2018 3/7/2018		**TLM1**	CO1	T1	
12.	KDD process	1	6/7/2018		**TLM1**	CO1	T1	
13.	Issues regarding data mining, Applications of data mining	1	7/7/2018		**TLM1**	CO1	T1	
14.	TUTORIAL-1	1	9/7/2018		**TLM3**			
15.	Assignment/Quiz-1	1	10/7/2018		**TLM6**			
No. of classes required to complete UNIT-I		17			No. of classes taken:			

UNIT-II: Data Pre-Processing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
16.	Why we need pre-processing	1	13/7/2018		**TLM1**	CO2	T1	
17.	Data Cleaning	1	14/7/2018		**TLM1**	CO2	T1	
18.	Data Integration	1	16/7/2018		**TLM1**	CO2	T1	
19.	Chi square Analysis	1	17/7/2018		**TLM1**	CO2	T1	
20.	Data Transformation	1	20/7/2018		**TLM1**	CO2	T1	
21.	Data Reduction	2	21/7/2018 23/7/2018		**TLM2**	CO2	T1	
22.	Discretization & Concept hierarchy generation	1	24/7/2018		**TLM2**	CO2	T1	
23.	Data mining primitives	1	27/7/2018		**TLM2**	CO2	T1	
24.	Graphical user interfaces	1	28/7/2018		**TLM2**	CO2	T1	
25.	Data mining Architecture	1	30/7/2018		**TLM1**	CO2	T1	
26.	Concept Description, Data Generalization,	2	31/7/2018 03/8/2018		**TLM2**	CO2	T1	
27.	Characterizations, Class Comparisons.	2	04/8/2018		**TLM2**	CO2	T1	
28.	Descriptive Statistical Measures	2	06/08/2018 07/08/2018		**TLM2**	CO2	T1	
29.	Tutorial 2	1	10/8/2018		**TLM3**			
30.	Assignment/Quiz-2	1	11/8/2018		**TLM6**			
No. of classes required to complete UNIT-II		19			No. of classes taken:			

UNIT-III: Association Rule mining

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
31.	Association rule mining	1	20/8/18		**TLM1**	CO3	T1	
32.	Apriori algorithm	3	21/8/18 24/8/18 25/8/18		**TLM1**	CO3	T1	
33.	FP growth algorithm	2	27/8/18 28/8/18		**TLM1**	CO3	T1	
34.	Single dimensional Boolean association from transitional database	1	31/8/18		**TLM1**	CO3	T1	
35.	Multi-level	2	1/9/2018		**TLM2**	CO3	T1	

	association rules from transitional databases		3/9/2018					
36.	Tutorial 3	1	4/9/2018		**TLM3**	CO3	T1	
37.	Assignment/Quiz-3	1	7/9/2018		**TLM6**		T1	
No. of classes required to complete UNIT-III		11			No. of classes taken:			

UNIT-IV: Classification and Predition Analysis

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
38.	Classification and Prediction	1	8/9/2018		**TLM1**	CO4	T1	
39.	Issues and Decision Tree induction	2	10/9/18 11/9/18		**TLM1**	CO4	T1	
40.	Bayesian classification	2	14/9/18 15/9/18		**TLM1**	CO4	T1	
41.	Rule based Classification	1	17/9/18		**TLM1**	CO4	T1	
42.	Other Classification methods	1	18/9/18		**TLM2**	CO4	T1	
43.	Prediction	1	21/9/18		**TLM1**	CO4	T1	
44.	Classifier accuracy ,Cluster analysis	1	22/9/18		**TLM1**	CO4	T1	
45.	Decision tree induction algorithm	1	24/9/18		**TLM1**	CO4	T1	
46.	K-Nearest Neighbor algorithm	2	25/9/18 28/9/18		**TLM1**	CO4	T1	
47.	Hierarchical clustering algorithm	1	29/9/18		**TLM2**	CO4	T1	
48.	Outlier Analysis	1	1/10/18		**TLM1**	CO4	T1	
49.	TUTORIAL-4	1	2/10/18		**TLM3**			
50.	Assignment/Quiz-4	1	5/10/18		**TLM6**			
No. of classes required to complete UNIT-IV		16			No. of classes taken:			

UNIT-V: Multidimensional Analysis

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
51.	Multi-dimensional analysis and descriptive mining of complex data objects	1	6/10/18		**TLM2**	CO5	T1	
52.	Spatial databases	1	8/10/18		**TLM2**	CO5	T1	
53.	Spatial databases contd...	1	9/10/18		**TLM2**	CO5	T1	
54.	Multimedia databases	1	12/10/18		**TLM2**	CO5	T1	

55.	Time series and sequence of data	2	13/10/18		**TLM2**	CO5	T1	
56.	Text databases	1	15/10/18		**TLM2**	CO5	T1	
57.	World wide web	1	16/10/18		**TLM2**	CO5	T1	
58.	Applications and trends in data mining contd...	1	22/10/18		**TLM2**	CO5	T1	
59.	Tutorial 5	1	23/10/18		**TLM3**			
60.	Assignment 5/Quiz	1	26/10/18		**TLM6**			
No. of classes required to complete UNIT-V		11			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
61.	Advanced topics in mining , Research topics related to social networking	1	27/10/18					

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

EVALUATION PROCESS:

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

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

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

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

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

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

PROGRAM OUTCOMES

Engineering Graduates will be able to:

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

and norms of the engineering practice.

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

PROGRAM SPECIFIC OUTCOMES

1. Programming Paradigms:

To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering:

To inculcate an ability to Analyse, Design and implement data driven applications into the students.

3. Software Engineering:

Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

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

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

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : Data Mining and Data Warehousing(DMDW) - S177

L-T-P STRUCTURE : 3-1-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : Mr.N V NAIK

COURSE COORDINATOR: Mr.A Raja Gopal

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

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

COURSE OUTCOMES (COs)

CO1: Outline the basic concepts of data warehouse & data mining.

CO2: Apply data pre-processing, generalization and data characterization techniques to provide suitable input for a range of data mining algorithms.

CO3: Analyze and provide solutions for real world problems using mining association techniques.

CO4: Examine the different classification & clustering techniques in data mining.

CO5: Apply data mining techniques to complex data objects like spatial data, multimedia data and web mining.

COURSE ARTICULATION MATRIX (Correlation between Cos-Pos-PSOs):

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

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

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

BOS APPROVED TEXT BOOKS:

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

BOS APPROVED REFERENCE BOOKS:

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

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

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

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

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT-I : Introduction to Data warehouse

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Data warehouse	1	11/6/2018		**TLM1**	CO1	T1	
2.	Introduction-Data, Info. Importance of DMDW	1	13/6/2018		**TLM1**	CO1	T1	
3.	Data warehouse briefing	1	16/6/2018		**TLM1**	CO1	T1	
4.	Data warehouse Need, OLTP vs OLAP	1	18/6/2018		**TLM1**	CO1	T1	
5.	Multidimensional data mode s	2	20/6/2018 22/6/2018		**TLM1**	CO1	T1	
6.	Concept Hierarchy, OLAP	1	23/6/2018		**TLM2**	CO1	T1	
7.	DWH Architecture	1	25/6/2018		**TLM2**	CO1	R1	
8.	Types of OLAP servers, Meta Data Repository	1	27/6/2018		**TLM2**	CO1	T1	
9.	DWH Implementation	1	29/6/2018		**TLM1**	CO1	T1	
10.	Further Development, DWH to Data Mining	1	30/6/2018		**TLM1**	CO1	T1	
11.	Introduction to data mining	2	2/7/2018 4/7/2018		**TLM1**	CO1	T1	
12.	KDD process	1	6/7/2018		**TLM1**	CO1	T1	
13.	Issues regarding data mining, Applications of data mining	1	7/7/2018		**TLM1**	CO1	T1	
14.	TUTORIAL-1	1	9/7/2018		**TLM3**			
15.	Assignment/Quiz-1	1	11/7/2018		**TLM6**			
No. of classes required to complete UNIT-I		17			No. of classes taken:			

UNIT-II: Data Pre-Processing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
16.	Why we need pre-processing	1	13/7/2018		**TLM1**	CO2	T1	
17.	Data Cleaning	1	14/7/2018		**TLM1**	CO2	T1	
18.	Data Integration	1	16/7/2018		**TLM1**	CO2	T1	
19.	Chi square Analysis	1	18/7/2018		**TLM1**	CO2	T1	
20.	Data Transformation	1	20/7/2018		**TLM1**	CO2	T1	
21.	Data Reduction	2	21/7/2018 23/7/2018		**TLM2**	CO2	T1	
22.	Discretization & Concept hierarchy generation	1	25/7/2018		**TLM2**	CO2	T1	
23.	Data mining primitives	1	27/7/2018		**TLM2**	CO2	T1	
24.	Graphical user interfaces	1	28/7/2018		**TLM2**	CO2	T1	
25.	Data mining Architecture	1	30/7/2018		**TLM1**	CO2	T1	
26.	Concept Description, Data Generalization,	2	31/7/2018 01/8/2018		**TLM2**	CO2	T1	
27.	Characterizations, Class Comparisons.	2	03/8/2018 04/8/2018		**TLM2**	CO2	T1	
28.	Descriptive Statistical Measures	2	06/08/2018 08/08/2018		**TLM2**	CO2	T1	
29.	Tutorial 2	1	10/8/2018		**TLM3**			
30.	Assignment/Quiz-2	1	11/8/2018		**TLM6**			
No. of classes required to complete UNIT-II		19			No. of classes taken:			

UNIT-III: Association Rule mining

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
31.	Association rule mining	1	20/8/18		**TLM1**	CO3	T1	
32.	Apriori algorithm	3	22/8/18 24/8/18 25/8/18		**TLM1**	CO3	T1	
33.	FP growth algorithm	2	27/8/18 29/8/18		**TLM1**	CO3	T1	
34.	Single dimensional Boolean association from transitional database	1	31/8/18		**TLM1**	CO3	T1	
35.	Multi-level	2	1/9/2018		**TLM2**	CO3	T1	

	association rules from transitional databases		3/9/2018					
36.	Tutorial 3	1	5/9/2018		**TLM3**	CO3	T1	
37.	Assignment/Quiz-3	1	7/9/2018		**TLM6**		T1	
No. of classes required to complete UNIT-III		11			No. of classes taken:			

UNIT-IV: Classification and Predition Analysis

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
38.	Classification and Prediction	1	8/9/2018		**TLM1**	CO4	T1	
39.	Issues and Decision Tree induction	2	10/9/18 12/9/18		**TLM1**	CO4	T1	
40.	Bayesian classification	2	14/9/18 15/9/18		**TLM1**	CO4	T1	
41.	Rule based Classification	1	17/9/18		**TLM1**	CO4	T1	
42.	Other Classification methods	1	19/9/18		**TLM2**	CO4	T1	
43.	Prediction	1	21/9/18		**TLM1**	CO4	T1	
44.	Classifier accuracy ,Cluster analysis	1	22/9/18		**TLM1**	CO4	T1	
45.	Decision tree induction algorithm	1	24/9/18		**TLM1**	CO4	T1	
46.	K-Nearest Neighbor algorithm	2	26/9/18 28/9/18		**TLM1**	CO4	T1	
47.	Hierarchical clustering algorithm	1	29/9/18		**TLM2**	CO4	T1	
48.	Outlier Analysis	1	1/10/18		**TLM1**	CO4	T1	
49.	TUTORIAL-4	1	3/10/18		**TLM3**			
50.	Assignment/Quiz-4	1	5/10/18		**TLM6**			
No. of classes required to complete UNIT-IV		16			No. of classes taken:			

UNIT-V: Multidimensional Analysis

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
51.	Multi-dimensional analysis and descriptive mining of complex data objects	1	6/10/18		**TLM2**	CO5	T1	
52.	Spatial databases	1	8/10/18		**TLM2**	CO5	T1	
53.	Spatial databases contd...	1	10/10/18		**TLM2**	CO5	T1	
54.	Multimedia databases	1	12/10/18		**TLM2**	CO5	T1	

55.	Time series and sequence of data	2	13/10/18		**TLM2**	CO5	T1	
56.	Text databases	1	15/10/18		**TLM2**	CO5	T1	
57.	World wide web	1	17/10/18		**TLM2**	CO5	T1	
58.	Applications and trends in data mining contd...	1	22/10/18		**TLM2**	CO5	T1	
59.	Tutorial 5	1	24/10/18		**TLM3**			
60.	Assignment 5/Quiz	1	26/10/18		**TLM6**			
No. of classes required to complete UNIT-V		11			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
61.	Advanced topics in mining, Research topics related to social networking	1	27/10/18					

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

EVALUATION PROCESS:

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

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

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

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

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

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

PROGRAM OUTCOMES

Engineering Graduates will be able to:

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

and norms of the engineering practice.

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

PROGRAM SPECIFIC OUTCOMES

1. Programming Paradigms:

To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering:

To inculcate an ability to Analyse, Design and implement data driven applications into the students.

3. Software Engineering:

Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

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

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

COURSE HANDOUT

Part-A

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

ACADEMIC YEAR : 2017-18

COURSE NAME & CODE : INDUSRIAL MANAGEMENT & S270

L-T-P STRUCTURE : 3-1-0

COURSE CREDITS : 3

COURSE INSTRUCTOR : P. SIVA REDDY

COURSE COORDINATOR : P. SIVA REDDY

- **PRE-REQUISITES: NIL**

COURSE EDUCATIONAL OBJECTIVES (CEOs) :

This course provides the knowledge

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 make to understand material management techniques
4. To make students understand the concept of HRM and its functions
5. To make students understand PERT & CPM methods in effective project management and need of project crashing and its consequence on cost of project

COURSE OUTCOMES (COs)

Upon The Successful Completion of This Course Students Will Able To:

1. Apply management principles to the particle situations to be in a position to know which type of business organisation structure suits
2. Able to make decision making relating to the problems in operations and production activities thereby improving the productivity by proper utilisation input factors by designing the better working methods and with better work study techniques.
3. Able to improve quality of working through SQC techniques and also take decisions relating to reduce the investment in materials through better control of inventory
4. Able to manage people in working environment with the practices of HRM across corporate businesses
5. Able to use PERT & CPM techniques in effective project management to identify critical path and try to complete projects on time as well as reducing the project durations if need arises.

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

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2							2	1			2			
CO2					2							2			
CO3												2			
CO4								3	2			2			
CO5				2							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).

BOS APPROVED TEXT BOOKS:

Text Books:

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

References:

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

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT-I : Introduction Management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	12-06-2018		**TLM1**	CO1	T1	
2.	Course Outcomes	1	13-06-18		TLM2	CO1	T1	
3.	Introduction to UNIT-I: Management Introduction and Definition	1	15-06-18		**TLM1**	CO1	T1	
4.	Management Introduction and Definition	1	16-06-18					
5.	Career Guidance Training	1	18-06-2018					
6.	Career Guidance Training	1	20-06-2018					
7.	Career Guidance Training	1	21-06-2018					
8.	Career Guidance Training	1	22-06-2018					
9.	Career Guidance Training	1	25-06-2018					
10.	Career Guidance Training	1	27-06-2018					
11.	Career Guidance Training	1	28-06-2018					
12.	Nature Importance of management & Functions	1	03-07-18					
13.	TUTORIAL-1	1	04-07-18		**TLM3**	CO1	T1	
14.	Taylor's scientific	1	06-07-18		**TLM1**	CO1	T1	

	management theory							
15.	Fayal's principles of management	1	07-07-18		**TLM1**	CO1	T1	
16.	Contribution of Elton mayo	1	10-07-18		**TLM1**	CO1	T1	
17.	TUTORIAL-2	1	11-07-18		**TLM3**	CO1	T1	
18.	MASLOW theory & Herzberg theory of motivation	1	13-07-18		**TLM2**	CO1	T1	
19.	Douglas MC Gregor theory of motivation	1	14-07-18		**TLM2**	CO1	T1	
20.	Organization Basic concept: Authority & responsibility and Delegation of Authority	1	17-07-18		**TLM2**	CO1	T1	
21.	TUTORIAL-3	1	18-07-18		**TLM3**	CO1	T1	
22.	Span of control & Departmentation and Decentralization	1	20-07-18		**TLM2**	CO1	T1	
23.	Organisation structure :line organization structure,	1	03-07-18		**TLM2**	CO1	T1	
24.	Line and staff organization	1	21-07-18		**TLM2**	CO1	T1	
25.	TUTORIAL-4	1	24-07-18		**TLM3**	CO1	T1	
26.	Functional organization	1	25-07-18		**TLM2**	CO1	T1	
27.	Committee & Matrix organization	1	27-07-18		**TLM2**	CO1	T1	
No. of classes required to complete UNIT-I		27			No. of classes taken:			

UNIT-II : Operations Management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	**UNIT II Operations Management :introduction** Plant location and Factors influencing location	1	27-07-18		**TLM1**	CO2	T1 or R3	
29.	Objectives and Principles of plant layout	1	28-07-18		**TLM1**	CO2	T1 or R3	
30.	types of plant layouts	1	31-07-18		**TLM1**	CO2	T1 or R3	
31.	TUTORIAL-5	1	01-08-18		**TLM3**	CO2	T1 or R3	
32.	Methods of production : job batch and mass production	1	03-08-18		**TLM2**	CO2	T1 or R3	
33.	Work study: Basic procedure involved in method study	1	04-08-18		**TLM2**	CO2	T1 or R3	
34.	Work measurement Objectives and Importance	1	07-08-18		**TLM2**	CO2	T1 or R3	
35.	TUTORIAL-6	1	08-08-18		**TLM3**	CO2	T1 or R3	
36.	Basic procedure involved in work measurement	1	09-08-18		**TLM1**	CO2	T1 or R3	
37.	**I MID**	1	14-08-18					
38.	**I MID**	1	16-08-18					
39.	**I MID**	1	18-08-18					
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III : Quality and materials management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
40.	Career Guidance Training	1	21-08-18					
41.	Career Guidance Training	1	24-08-18					
42.	Career Guidance Training	1	25-08-18					
43.	**Quality and materials management**	1	28-08-18		**TLM1**	CO3	T1 or R3	
44.	Statistical quality control Meaning	1	29-08-18		**TLM1**	CO3	T1 or R3	
45.	Variables and attributes	1	31-08-18		**TLM1**	CO3	T1 or R3	
46.	X chart problems and R	1	01-09-18		**TLM1**	CO3	T1 or R3	
47.	TUTORIAL-7	1	04-09-18		**TLM3**			
48.	C Chart problems AND P Chart problems	1	05-09-18		**TLM1**	CO3	T1 or R3	
49.	Acceptance sampling & Sampling plans	1	07-09-18		**TLM1**	CO3	T1 or R3	
50.	Deming's contribution to quality	1	08-09-18		**TLM1**	CO3	T1 or R3	
51.	TUTORIAL-8	1	11-09-18		**TLM3**	CO3		
52.	Materials management :Objectives of Materials management	1	12-09-18		**TLM1**	CO3	T1 or R3	
53.	Need for inventory control	1	14-09-18		**TLM1**	CO3	T1 or R3	
54.	Purchase procedure, Store records	1	15-09-18		**TLM1**	CO3	T1 or R3	
55.	Methods of inventory control :ABC analysis & EOQ analysis	1	18-09-18		**TLM1**	CO3	T1 or R3	
56.	EOQ Problems & Stock levels & Problems on stock levels	1	18-09-18		**TLM1**	CO3	T1 or R3	
No. of classes required to complete UNIT-III		17				No. of classes taken:		

UNIT-IV : Human Resource management (HRM)

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
57.	Concepts of HRM:Basic functions of HR manager	1	19-09-18		**TLM1**	CO4	T1	
58.	Man power planning	1	22-09-18		**TLM1**	CO4	T1	
59.	Recruitment & Selection	1	25-09-18		**TLM2**	CO4	T1	
60.	TUTORIAL-9	1	26-08-18		**TLM3**	CO4	T1	
61.	Training and development	1	28-08-18		**TLM2**	CO4	T1	
62.	Placement, Wage and salary administration	1	29-08-18		**TLM1**	CO4	T1	
63.	Promotion,Transfer & Separation & Performance Appraisal	1	05-10-18		**TLM1**	CO4	T1	
64.	TUTORIAL-10	1	06-10-18		**TLM3**	CO4	T1	

65.	Job evaluation & Merit raring	1	09-10-18		**TLM1**	CO4	T1	
No. of classes required to complete UNIT-IV		09			No. of classes taken:			

UNIT-V : Project management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
66.	**Project management: Introduction** Early techniques in project management	1	10-10-18		**TLM2**	CO5	T1 or R4	
67.	Network analysis & Rules for drawing of networks and Critical path method	1	12-10-18		**TLM2**	CO5	T1 or R4	
68.	Problems on CPM & Identifying critical path	1	13-10-18		**TLM2**	CO5	T1 or R4	
69.	TUTORIAL-11	1	16-10-18		TLM3	CO5	T1 or R4	
70.	Programme evaluation and review technique (PERT)	1	19-10-18		TLM1	CO5	T1 or R4	
71.	Problems on PERT	1	20-10-18		TLM1	CO5	T1 or R4	
72.	Project cost analysis project crashing	1	23-10-18		**TLM1**	CO5	T1 or R4	
73.	TUTORIAL -12	1	24-10-18		**TLM3**	CO5	T1 or R4	
No. of classes required to complete UNIT-V		09				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
74.	II MID EXAM		29-10-2018					
75.	II MID EXAM		31-10-2018					
76.	II MID EXAM		01-11-2018					
77.	II MID EXAM		02-11-2018					

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

Part - C

EVALUATION PROCESS:

Evaluation Task	COs	Marks
Assignment/Quiz – 1	1	A1=5
Assignment/Quiz – 2	2	A2=5
I-Mid Examination	1,2	B1=20
Assignment/Quiz – 3	3	A3=5

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

P. SIVA REDDY	P. SIVA REDDY	U.RAMBABU	Dr.A.ADISESHA REDDY
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
Accredited by NAAC with 'A' Grade, ISO 9001:2015 Certified Institution
Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

Department of Computer Science & Engineering

COURSE HANDOUT

Part-A

PROGRAM : B.Tech., VII-Sem, CSE A section

ACADEMIC YEAR : 2017-18

COURSE NAME & CODE : INDUSRIAL MANAGEMENT & S270

L-T-P **STRUCTURE** : 3-1-0

COURSE CREDITS 3

COURSE INSTRUCTOR : B.KALYAN KUMAR

COURSE COORDINATOR : U.RAMBABU

- **PRE-REQUISITES: NIL**

COURSE EDUCATIONAL OBJECTIVES (CEOs) :

This course provides the knowledge

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
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4. To make students understand the concept of HRM and its functions
5. To make students understand PERT & CPM methods in effective project management and need of project crashing and its consequence on cost of project

COURSE OUTCOMES (COs)

Upon The Successful Completion of This Course Students Will Able To:

1. Apply management principles to the particle situations to be in a position to know which type of business organisation structure suits
2. Able to make decision making relating to the problems in operations and production activities thereby improving the productivity by proper utilisation input factors by designing the better working methods and with better work study techniques.
3. Able to improve quality of working through SQC techniques and also take decisions relating to reduce the investment in materials through better control of inventory
4. Able to manage people in working environment with the practices of HRM across corporate businesses
5. Able to use PERT & CPM techniques in effective project management to identify critical path and try to complete projects on time as well as reducing the project durations if need arises.

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

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2							2	1			2			
CO2					2							2			
CO3												2			
CO4								3	2			2			
CO5				2							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).

BOS APPROVED TEXT BOOKS:

Text Books:

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

References:

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R2: Stoner, Freeman, Gilbert, Management, 6th edition Pearson education, New Delhi, 2004
R3:O.P. Khana, Industrial engineering and Management
R4:L.S.Srinath, PERT & CPM

Part-B

COURSE DELIVERY PLAN (LESSON PLAN): Section-A

UNIT-I : Introduction Management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	11-06-2018		**TLM1**	CO1	T1	
2.	Course Outcomes	1	14-06-2018		TLM2	CO1	T1	
3.	Introduction to UNIT-I: Management Introduction and Definition	1	15-06-2018		**TLM1**	CO1	T1	
4.	Career Guidance Training	1	16-06-2018					
5.	Career Guidance Training	1	18-06-2018					
6.	Career Guidance Training	1	21-06-2018					
7.	Career Guidance Training	1	22-06-2018					
8.	Career Guidance Training	1	23-06-2018					
9.	Career Guidance Training	1	25-06-2018					
10.	Career Guidance Training	1	28-06-2018					
11.	Career Guidance Training	1	29-06-2018					
12.	Nature Importance of management & Functions	1	30-06-2018					
13.	TUTORIAL-1	1	02-07-2018		**TLM3**	CO1	T1	
14.	Taylor's scientific management theory	1	05-07-2018		**TLM1**	CO1	T1	
15.	Fayal's principles of management	1	06-07-2018		**TLM1**	CO1	T1	
16.	Contribution of Elton mayo	1	07-07-2018		**TLM1**	CO1	T1	
17.	TUTORIAL-2	1	09-7-2018		**TLM3**	CO1	T1	
18.	MASLOW theory & Herzberg theory of motivation	1	12-07-2018		**TLM2**	CO1	T1	
19.	Douglas MC Gregor theory of motivation	1	13-07-2018		**TLM2**	CO1	T1	
20.	Organization Basic concept: Authority & responsibility and Delegation of Authority	1	14-07-2018		**TLM2**	CO1	T1	
21.	TUTORIAL-3	1	16-07-2018		**TLM3**	CO1	T1	
22.	Span of control & Departmentation and Decentralization	1	19-07-2018		**TLM2**	CO1	T1	
23.	Organisation structure :line organization structure,	1	20-07-2018		**TLM2**	CO1	T1	
24.	Line and staff organization	1	21-07-2018		**TLM2**	CO1	T1	

25.	TUTORIAL-4	1	23-07-2018		**TLM3**	CO1	T1	
26.	Functional organization	1	26-07-2018		**TLM2**	CO1	T1	
27.	Committee & Matrix organization	1	27-07-2018		**TLM2**	CO1	T1	
No. of classes required to complete UNIT-I		27			No. of classes taken:			

UNIT-II : Operations Management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	**UNIT II Operations Management :introduction** Plant location and Factors influencing location	1	28-07-2018		**TLM1**	CO2	T1 or R3	
29.	Objectives and Principles of plant layout	1	30-07-2018		**TLM1**	CO2	T1 or R3	
30.	types of plant layouts	1	02-08-2018		**TLM1**	CO2	T1 or R3	
31.	TUTORIAL-5	1	03-08-2018		**TLM3**	CO2	T1 or R3	
32.	Methods of production : job batch and mass production	1	04-08-2018		**TLM2**	CO2	T1 or R3	
33.	Work study: Basic procedure involved in method study	1	06-08-2018		**TLM2**	CO2	T1 or R3	
34.	Work measurement Objectives and Importance	1	09-08-2018		**TLM2**	CO2	T1 or R3	
35.	TUTORIAL-6	1	10-08-2018		**TLM3**	CO2	T1 or R3	
36.	Basic procedure involved in work measurement	1	11-08-2018		**TLM1**	CO2	T1 or R3	
37.	**I MID**		13-08-2018					
38.	**I MID**		TO					
39.	**I MID**		18-08-2018					
No. of classes required to complete UNIT-II		09			No. of classes taken:			

UNIT-III : Quality and materials management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
40.	Career Guidance Training		20-08-2018					
41.	Career Guidance Training		TO					
42.	Career Guidance Training		25-08-2018					
43.	**Quality and materials management**	1	27-08-2018		**TLM1**	CO3	T1 or R3	
44.	Statistical quality control Meaning	1	30-08-2018		**TLM1**	CO3	T1 or R3	
45.	Variables and attributes	1	31-08-2018		**TLM1**	CO3	T1 or R3	
46.	X chart problems and R	1	01-09-2018		**TLM1**	CO3	T1 or R3	
47.	TUTORIAL-7	1	06-09-2018		**TLM3**			
48.	C Chart problems AND P Chart problems	1	07-09-2018		**TLM1**	CO3	T1 or R3	
49.	Acceptance sampling & Sampling plans	1	08-09-2018		**TLM1**	CO3	T1 or R3	
50.	Deming's contribution to quality	1	10-09-2018		**TLM1**	CO3	T1 or R3	
51.	TUTORIAL-8	1	14-09-2018		**TLM3**	CO3		
52.	Materials management :Objectives of Materials management	1	15-09-2018		**TLM1**	CO3	T1 or R3	
53.	Need for inventory control	1	17-09-2018		**TLM1**	CO3	T1 or R3	
54.	Purchase procedure, Store records	1	20-09-2018		**TLM1**	CO3	T1 or R3	
55.	Methods of inventory control :ABC analysis & EOQ analysis	1	22-09-2018		**TLM1**	CO3	T1 or R3	
56.	EOQ Problems & Stock levels & Problems on stock levels	1	24-09-2018		**TLM1**	CO3	T1 or R3	
No. of classes required to complete UNIT-III		13				No. of classes taken:		

UNIT-IV : Human Resource management (HRM)

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
57.	Concepts of HRM:Basic functions of HR manager	1	27-09-2018		**TLM1**	CO4	T1	
58.	Man power planning	1	28-09-2018		**TLM1**	CO4	T1	
59.	Recruitment & Selection	1	29-09-2018		**TLM2**	CO4	T1	
60.	TUTORIAL-9	1	01-10-2018		**TLM3**	CO4	T1	
61.	Training and development	1	04-10-2018		**TLM2**	CO4	T1	
62.	Placement, Wage and salary administration	1	05-10-2018		**TLM1**	CO4	T1	
63.	Promotion,Transfer & Separation & Performance Appraisal	1	06-10-2018		**TLM1**	CO4	T1	
64.	TUTORIAL-10	1	08-10-2018		**TLM3**	CO4	T1	
65.	Job evaluation & Merit raring	1	11-10-2018		**TLM1**	CO4	T1	
No. of classes required to complete UNIT-IV		09			No. of classes taken:			

UNIT-V : Project management

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
66.	**Project management: Introduction** Early techniques in project management	1	12-10-2018		**TLM2**	CO5	T1 or R4	
67.	Network analysis & Rules for drawing of networks and Critical path method	1	13-10-2018		**TLM2**	CO5	T1 or R4	
68.	Problems on CPM & Identifying critical path	1	15-10-2018		**TLM2**	CO5	T1 or R4	
69.	TUTORIAL-11	1	22-10-2018		TLM3	CO5	T1 or R4	
70.	Programme evaluation and review technique (PERT)	1	25-10-2018		TLM1	CO5	T1 or R4	
71.	Problems on PERT	1	26-10-2018		TLM1	CO5	T1 or R4	
72.	Project cost analysis project crashing	1	27-10-2018		**TLM1**	CO5	T1 or R4	
73.	TUTORIAL -12	1	27-10-2018		**TLM3**	CO5	T1 or R4	
No. of classes required to complete UNIT-V		09			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
74.	Online trading	1	27-10 -2018		TLM4		ZERODHA WEB SITE	
75.	II MID EXAM		29-10-2018					
76.	II MID EXAM		31-10-2018					
77.	II MID EXAM		01-11-2018					
78.	II MID EXAM		02-11-2018					

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

Part - C

EVALUATION PROCESS:

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

B.Kalyan Kumar	U.RAMBABU	U.RAMBABU	Dr. CH.V. Narayana
Course Instructor	Course Coordinator	Module Coordinator	HOD

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : **Mobile Computing & S316**

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **Mr. P. Vamsi Naidu**

COURSE COORDINATOR: Mr. P. Vamsi Naidu

PRE-REQUISITE: Knowledge in Computer Networks

COURSE OBJECTIVE: The main objective of this course is to enable the students about intricacies of mobile computing and its core functionality. One can also get introduced with various routing protocols of Ad-hoc Networks. This course also enables students to develop Applications that runs on Android Platform.

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

CO1: Analyze design issues of MAC in mobile networks

CO2: Explore the functioning of Network and Transport layers in mobile networks

CO3: Analyze the routing protocols in MANET'S

CO4: Identify various components of android application development

CO5: Evaluate various VOIP protocols

COURSE ARTICULATION MATRIX (Correlation between Cos-Pos-PSOs):

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

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

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

BOS APPROVED TEXT BOOKS:

T1 JochenSchiller, "Mobile Communications", Addison-Wesley. (Chapters 4, 7, 9, 10, 11), second edition, 2004.

T2 C. Siva Ram Murthy, B.S. Manoj, "Ad Hoc Wireless Networks: Architectures and Protocols", Pearson Education, 2004
T3 Android for Programmers: An App-Driven Approach 1st Edition
T4 Voice over IP Fundamentals, 2ndEdition, Cisco Press; Cisco Press, 2006.

BOS APPROVED REFERENCE BOOKS:
R1 Reza Behravanfar, "Mobile Computing Principles: Designing and Developing Mobile Applications with UML and XML", Cambridge University Press, October 2004,
R2 Adelstein, Frank, Gupta, Sandeep KS, Richard III, Golden, Schwiebert, Loren, "Fundamentals of Mobile and Pervasive Computing", ISBN: 0071412379, McGraw-Hill Professional, 2005.

R3 Stefano Basagni, Marco Conti, Silvia Giordano, Ivan Stojmenović, "Mobile ad hoc networking", IEEE Press, Wiley InterScience, 2004

COURSE DELIVERY PLAN (LESSON PLAN): Section-A
UNIT-I: Introduction to Mobile Computing, GSM and MAC

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to MC, novel applications, limitations, and architecture.	1	12/6/2018		**TLM1**	CO1	T1	
2.	System architecture	1	13/6/2018		**TLM1**	CO1	T1	
3.	Mobile services, Protocols	1	15/6/2018		**TLM1**	CO1	T1	
4.	Localization and calling	1	19/6/2018		**TLM1**	CO1	T1	
5.	Handover	1	20/6/2018		**TLM2**	CO1	T1	
6.	Security, and New data services	1	22/6/2018		**TLM1**	CO1	T1	
7.	Motivation for a specialized MAC	2	23/6/2018 26/6/2018		**TLM1**	CO1	T1	
8.	SDMA	1	27/6/2018		**TLM2**	CO1	T1	
9.	FDMA	1	29/6/2018		**TLM2**	CO1	T1	
10	TDMA	1	30/6/2018		**TLM2**	CO1	T1	
11	CDMA	1	3/7/2018		**TLM2**	CO1	T1	
12	TUTORIAL-1	1	4/7/2018		**TLM3**			
13	Assignment/Quiz-1	1	6/7/2018		**TLM6**			
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II: Mobile Network and Transport Layer

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
14	Mobile IP Introduction	1	7/7/2018		**TLM1**	CO2	T1	
15	IP packet delivery	1	10/7/2018		**TLM2**	CO2	T1	
16	Agent advertisement and discovery	1	11/7/2018		**TLM1**	CO2	T1	
17	Registration, Tunnelling	1	13/7/2018		**TLM1**	CO2	T1	
18	Encapsulation, Optimizations	1	14/7/2018		**TLM1**	CO2	T1	
19	Traditional TCP, Indirect TCP	1	17/7/2018		**TLM2**	CO2	T1	
20	Snooping TCP, Mobile TCP	1	18/7/2018		**TLM2**	CO2	T1	
21	Fast retransmit/fast recovery	1	20/7/2018		**TLM2**	CO2	T1	
22	Transmission /time-out freezing	1	21/7/2018		**TLM2**	CO2	T1	
23	Selective retransmission, Transaction oriented TCP	1	24/7/2018		**TLM2**	CO2	T1	
24	Tutorial 2	1	25/7/2018		**TLM3**			
25	Assignment/Quiz-2	1	27/7/2018		**TLM6**			
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III: Adhoc Networks

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
26	Overview, Properties of a MANET, spectrum of MANET applications	1	21/8/18		**TLM1**	CO3	T2	
27	routing and various routing algorithms	3	24/8/2018 25/8/2018 28/8/2018		**TLM1**	CO3	T2	
28	security in MANETs	1	29/8/2018		**TLM1**	CO3	T2	
29	Introduction, Issues in Ad Hoc Wireless networks	1	31/8/2018		**TLM2**	CO3	T2	
30	Routing Protocols: Table Driven: DSDV,	1	01/9/2018		**TLM2**	CO3	T2	

	WRP							
31	Routing Protocols: On Demand: AODV, DSR.	1	04/9/2018		**TLM2**	CO3	T2	
32	Tutorial 3	1	05/9/2018		**TLM3**			
33	Assignment/Quiz-3	1	07/9/2018		**TLM6**			
No. of classes required to complete UNIT-III		10			No. of classes taken:			

UNIT-IV: Introduction to Android

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
34	What is Android? Setting up development environment	1	08/9/2018		**TLM2**	CO4	T3	
35	Dalvik Virtual Machine & .apk file extension,	1	11/9/2018		**TLM2**	CO4	T3	
36	Activities	1	12/9/2018		**TLM5**	CO4	T3	
37	Services	1	14/9/2018		**TLM5**	CO4	T3	
38	Broadcast Receivers	1	15/9/2018		**TLM5**	CO4	T3	
39	Content providers	1	18/09/2018		**TLM5**	CO4	T3	
40	Views & notifications,	1	19/9/2018		**TLM5**	CO4	T3	
41	Intents & Intent Filters	1	22/9/2018		**TLM5**	CO4	T3	
42	Android API levels	1	25/9/2018		**TLM2**	CO4	T3	
43	AndroidManifest.xml, uses-permission & uses-sdk	1	26/9/2018		**TLM2**	CO4	T3	
44	Resources & R.java, Assets, Layouts &Draw able Resources,	1	28/9/2018		**TLM2**	CO4	T3	
45	Activities and Activity lifecycle	1	29/9/2018		**TLM5**	CO4	T3	
46	First sample Application	1	03/9/2018		**TLM5**	CO4	T3	
47	TUTORIAL-4	1	05/9/2018		**TLM3**			
48	Assignment/Quiz-4	1	06/9/2018		**TLM6**			
No. of classes required to complete UNIT-IV		15			No. of classes taken:			

UNIT-V: Protocols and Tools

S.No.	Topics to be covered	No. of Classes	Tentative Date of	Actual Date of	Teaching Learning	Learning Outcome	Text Book	HOD Sign

		Required	Completion	Completion	Methods	COs	followed	Weekly
49	VOIP (what is VoIP? VoIP issues, VoIP architectures, VoIP protocol stack)	2	09/9/2018 10/9/2018		**TLM2**	CO5	T4	
50	Wireless Application Protocol-WAP	1	12/9/2018		**TLM2**	CO5	T4	
51	Bluetooth	1	13/10/18		**TLM2**	CO5	T4	
52	IOS: What is ios? history	1	16/10/18		**TLM2**	CO5	T4	
53	IOS: features, applications	1	19/10/18		**TLM2**	CO5	T4	
54	Tutorial 5	1	20/10/18		**TLM3**			
55	Assignment 5/Quiz	1	23/10/18		**TLM6**			
No. of classes required to complete UNIT-V		8			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
56	Advanced topics in mining , Research topics related to social networking	1	24/10/18					

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

EVALUATION PROCESS:

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

Semester End Examinations	**1,2,3,4,5**	**C=75**
Total Marks: A+B+C	**1,2,3,4,5**	**100**

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

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

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

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

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

PROGRAM OUTCOMES

Engineering Graduates will be able to:

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

and norms of the engineering practice.

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

PROGRAM SPECIFIC OUTCOMES

1. Programming Paradigms:

To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering:

To inculcate an ability to Analyse, Design and implement data driven applications into the students.

3. Software Engineering:

Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

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

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE HANDOUT

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

ACADEMIC YEAR : 2018-19

COURSE NAME & CODE : **Mobile Computing & S316**

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

COURSE CREDITS : 3

COURSE INSTRUCTOR : **Mr. P. Vamsi Naidu**

COURSE COORDINATOR: Mr. P. Vamsi Naidu

PRE-REQUISITE: Knowledge in Computer Networks

COURSE OBJECTIVE: The main objective of this course is to enable the students about intricacies of mobile computing and its core functionality. One can also get introduced with various routing protocols of Ad-hoc Networks. This course also enables students to develop Applications that runs on Android Platform.

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

CO1: Analyze design issues of MAC in mobile networks

CO2: Explore the functioning of Network and Transport layers in mobile networks

CO3: Analyze the routing protocols in MANET'S

CO4: Identify various components of android application development

CO5: Evaluate various VOIP protocols

COURSE ARTICULATION MATRIX (Correlation between Cos-Pos-PSOs):

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

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

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

BOS APPROVED TEXT BOOKS:

T1 JochenSchiller, "Mobile Communications", Addison-Wesley. (Chapters 4, 7, 9, 10, 11), second edition, 2004.

T2 C. Siva Ram Murthy, B.S. Manoj, "Ad Hoc Wireless Networks: Architectures and Protocols", Pearson Education, 2004
T3 Android for Programmers: An App-Driven Approach 1st Edition
T4 Voice over IP Fundamentals, 2ndEdition, Cisco Press; Cisco Press, 2006.

BOS APPROVED REFERENCE BOOKS:
R1 Reza Behravanfar, "Mobile Computing Principles: Designing and Developing Mobile Applications with UML and XML", Cambridge University Press, October 2004,
R2 Adelstein, Frank, Gupta, Sandeep KS, Richard III, Golden, Schwiebert, Loren, "Fundamentals of Mobile and Pervasive Computing", ISBN: 0071412379, McGraw-Hill Professional, 2005.

R3 Stefano Basagni, Marco Conti, Silvia Giordano, Ivan Stojmenović, "Mobile ad hoc networking", IEEE Press, Wiley InterScience, 2004

COURSE DELIVERY PLAN (LESSON PLAN): Section-A
UNIT-I: Introduction to Mobile Computing, GSM and MAC

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to MC, novel applications, limitations, and architecture.	1	11/6/2018		**TLM1**	CO1	T1	
2.	System architecture	1	12/6/2018		**TLM1**	CO1	T1	
3.	Mobile services, Protocols	1	14/6/2018		**TLM1**	CO1	T1	
4.	Localization and calling	1	18/6/2018		**TLM1**	CO1	T1	
5.	Handover	1	19/6/2018		**TLM2**	CO1	T1	
6.	Security, and New data services	1	21/6/2018		**TLM1**	CO1	T1	
7.	Motivation for a specialized MAC	2	23/6/2018 25/6/2018		**TLM1**	CO1	T1	
8.	SDMA	1	26/6/2018		**TLM2**	CO1	T1	
9.	FDMA	1	28/6/2018		**TLM2**	CO1	T1	
10	TDMA	1	30/6/2018		**TLM2**	CO1	T1	
11	CDMA	1	2/7/2018		**TLM2**	CO1	T1	
12	TUTORIAL-1	1	3/7/2018		**TLM3**			
13	Assignment/Quiz-1	1	5/7/2018		**TLM6**			
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II: Mobile Network and Transport Layer

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
14	Mobile IP Introduction	1	7/7/2018		**TLM1**	CO2	T1	
15	IP packet delivery	1	9/7/2018		**TLM2**	CO2	T1	
16	Agent advertisement and discovery	1	10/7/2018		**TLM1**	CO2	T1	
17	Registration, Tunnelling	1	12/7/2018		**TLM1**	CO2	T1	
18	Encapsulation, Optimizations	1	14/7/2018		**TLM1**	CO2	T1	
19	Traditional TCP, Indirect TCP	1	16/7/2018		**TLM2**	CO2	T1	
20	Snooping TCP, Mobile TCP	1	17/7/2018		**TLM2**	CO2	T1	
21	Fast retransmit/fast recovery	1	19/7/2018		**TLM2**	CO2	T1	
22	Transmission /time-out freezing	1	21/7/2018		**TLM2**	CO2	T1	
23	Selective retransmission, Transaction oriented TCP	1	23/7/2018		**TLM2**	CO2	T1	
24	Tutorial 2	1	24/7/2018		**TLM3**			
25	Assignment/Quiz-2	1	26/7/2018		**TLM6**			
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III: Adhoc Networks

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
26	Overview, Properties of a MANET, spectrum of MANET applications	1	20/8/18		**TLM1**	CO3	T2	
27	routing and various routing algorithms	3	21/8/2018 23/8/2018 25/8/2018		**TLM1**	CO3	T2	
28	security in MANETs	1	27/8/2018		**TLM1**	CO3	T2	
29	Introduction, Issues in Ad Hoc Wireless networks	1	28/8/2018		**TLM2**	CO3	T2	
30	Routing Protocols: Table Driven: DSDV,	1	30/8/2018		**TLM2**	CO3	T2	

	WRP							
31	Routing Protocols: On Demand: AODV, DSR.	1	01/9/2018		**TLM2**	CO3	T2	
32	Tutorial 3	1	04/9/2018		**TLM3**			
33	Assignment/Quiz-3	1	06/9/2018		**TLM6**			
No. of classes required to complete UNIT-III		10			No. of classes taken:			

UNIT-IV: Introduction to Android

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
34	What is Android? Setting up development environment	1	08/9/2018		**TLM2**	CO4	T3	
35	Dalvik Virtual Machine & .apk file extension,	1	10/9/2018		**TLM2**	CO4	T3	
36	Activities	1	11/9/2018		**TLM5**	CO4	T3	
37	Services	1	15/9/2018		**TLM5**	CO4	T3	
38	Broadcast Receivers	1	17/9/2018		**TLM5**	CO4	T3	
39	Content providers	1	18/09/2018		**TLM5**	CO4	T3	
40	Views & notifications,	1	20/9/2018		**TLM5**	CO4	T3	
41	Intents & Intent Filters	1	22/9/2018		**TLM5**	CO4	T3	
42	Android API levels	1	24/9/2018		**TLM2**	CO4	T3	
43	AndroidManifest.xml, uses-permission & uses-sdk	1	25/9/2018		**TLM2**	CO4	T3	
44	Resources & R.java, Assets, Layouts &Draw able Resources,	1	27/9/2018		**TLM2**	CO4	T3	
45	Activities and Activity lifecycle	1	29/9/2018		**TLM5**	CO4	T3	
46	First sample Application	1	01/9/2018		**TLM5**	CO4	T3	
47	TUTORIAL-4	1	04/9/2018		**TLM3**			
48	Assignment/Quiz-4	1	06/9/2018		**TLM6**			
No. of classes required to complete UNIT-IV		15			No. of classes taken:			

UNIT-V: Protocols and Tools

S.No.	Topics to be covered	No. of Classes	Tentative Date of	Actual Date of	Teaching Learning	Learning Outcome	Text Book	HOD Sign

		Required	Completion	Completion	Methods	COs	followed	Weekly
49	VOIP (what is VoIP? VoIP issues, VoIP architectures, VoIP protocol stack)	2	08/9/2018 09/9/2018		**TLM2**	CO5	T4	
50	Wireless Application Protocol-WAP	1	11/9/2018		**TLM2**	CO5	T4	
51	Bluetooth	1	13/10/2018		**TLM2**	CO5	T4	
52	IOS: What is ios? history	1	15/10/2018		**TLM2**	CO5	T4	
53	IOS: features, applications	1	16/10/2018		**TLM2**	CO5	T4	
54	Tutorial 5	1	20/10/2018		**TLM3**			
55	Assignment 5/Quiz	1	22/10/2018		**TLM6**			
No. of classes required to complete UNIT-V		8			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
56	Advanced topics in Ad-hoc networks and Android Application Development	2	23/10/2018 25/10/2018					

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

EVALUATION PROCESS:

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

Semester End Examinations	**1,2,3,4,5**	**C=75**
Total Marks: A+B+C	**1,2,3,4,5**	**100**

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

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

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

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

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

PROGRAM OUTCOMES

Engineering Graduates will be able to:

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

and norms of the engineering practice.

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

PROGRAM SPECIFIC OUTCOMES

1. Programming Paradigms:

To inculcate algorithmic thinking, formulation techniques and visualization, leading to problem solving skills using different programming paradigms.

2. Data Engineering:

To inculcate an ability to Analyse, Design and implement data driven applications into the students.

3. Software Engineering:

Develop an ability to implement various processes / methodologies /practices employed in design, validation, testing and maintenance of software products.

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