UNIT - I

Introduction: Overview of Artificial intelligence- Problems of AI, AI technique, Tic-Tac-Toe problem.

Intelligent Agents: Agents & environment, nature of environment, structure of agents, goal based agents, utility based agents, learning agents. Problem Solving: Problems, Problem Space &search: Defining the problem as state space search, production system, problem characteristics, and issues in the design of search programs.

UNIT – II

Search techniques: Solving problems by searching: problem solving agents, searching for solutions; uniform search strategies: breadth first search, depth first search, depth limited search, bi-directional search, comparing uniform search strategies.

Heuristic search strategies: Greedy best-first search, A* search, memory bounded heuristic search, local search algorithms & optimization problems, Hill climbing search, simulated annealing search, local beam search, genetic algorithms, constraint satisfaction problems, local search for constraint satisfaction problems.

UNIT – III

Knowledge: Knowledge representation issues, representation & mapping, approaches to knowledge representation, issues in knowledge representation.

Using predicate logic: Representing simple fact in logic, representing instant & ISA relationship, computable functions &predicates, resolution, natural deduction.

UNIT - IV

Representing knowledge using rules: Procedural verses declarative knowledge, logic programming, forward verses backward reasoning, matching, control knowledge.

UNIT - V

Reasoning: Probabilistic reasoning: Representing knowledge in an uncertain domain, the semantics of Bayesian networks, Dempster-Shafertheory, Fuzzy sets & fuzzy logics.

TEXT BOOK

Artificial Intelligence, Ritch & Knight, TMH

REFERENCES

1. Artificial Intelligence a Modern Approach, Stuart Russell & Peter Norvig Pearson

2. Introduction to Artificial Intelligence & Expert Systems, Patterson, PHI

3. Artificial Intelligence A new Synthesis, Neil J. Nilsson, Morgan Kaufman

4. Artificial Intelligence, John. F. Lugar, Pearson Ed.

5. Artificial Intelligence, Winston, Pearson Ed.

ARTIFICIAL INTELLIGENCE

Course Educational Objectives and Outcomes (CEOs & COs)

Course Educational objectives (CEOs):

1. Different types of AI techniques and their implementation.

2. Types of agents and activities of agents.

3. Different problem solving techniques and problem characteristics.

4. Various searching strategies and their implementations.

5. Representation of knowledge using predicate logic.

6. Representation of knowledge using prepositional logic.

7. Knowledge rules using reasoning.

8. Knowledge rules using matching.

9. Reasoning using fuzzy sets and fuzzy logics.

Course Outcomes (Cos):

Upon the successful completion of this course students will be able to:

CO1: Understand about AI techniques and different ways to implement them and deals about the techniques and set of rules to find solutions in problem solving.

CO2: Implement and understand about various searching strategies, presenting various searching algorithms in searching techniques and also deals about problem solving techniques in search trees. Implementation of local search methods, solving problems under different constraints, genetic algorithms.

CO3: Understand about knowledge, represent different issues in knowledge, and present various ways to represent it, implement predicate and propositional knowledge and present logic resolution and unification techniques.

CO4: Present different types of knowledge and reasoning techniques, understand about logic programming and PROLOG, and implement indexing and matching techniques.

CO5: Present uncertainty in knowledge and various techniques to solve it. Present efficient techniques to remove uncertainty in knowledge domain.

S.No	Date (Tentative)	Topics to be covered	Unit No.	Teaching Method/ Aid	Actual Date	Remarks
1	22-06-2015	**UNIT I:** Introduction to Artificial Intelligence	1	DM1		
2	24-06-2015	Overview of Artificial Intelligence	1	DM2		

3	25-06-2015	Problems of AI	1	DM1		
4	26-06-2015	AI Techniques	1	DM1		
5	27-06-2015	Tic-Tac-Toe Problem	1	DM6		
6	**29-06-2015**					
7	**01-07-2015**					
8	**02-07-2015**					
9	**03-07-2015**	*Campus Recruitment Training(CRT)Classes*				
10	**04-07-2015**					
11	**06-07-2015**					
12	08-07-2015	Introduction to Agents, Agents & Environment	1	DM2		
13	09-07-2015	Nature of Environment, Structure of Agents	1	DM1		
14	10-07-2015	Reflex agents, Goal based agents	1	DM6		
15	11-07-2015	Utility based agents, Learning agents	1	DM6		
16	13-07-2015	Problem solving, Problem Space & search	1	DM1		
17	15-07-2015	**Tutorial 1**	1	DM2		
18	16-07-2015	Define Problem as state space search, Water Jug problem	1	DM6		
19	17-07-2015	Production system, Problem characteristics	1	DM1		
20	20-07-2015	Issues in the design of search programs	1	DM1		
21	22-07-2015	**Tutorial 2**	2	DM2		
22	23-07-2015	**UNIT II:** Solving problems by searching	2	DM1		

23	24-07-2015	Uninformed searching strategies, BFS (Breadth first search)	2	DM1		
24	25-07-2015	Depth first search(DFS)	2	DM1		
25	27-07-2015	Depth Limited Search(DLS)	2	DM1		
26	29-07-2015	**Tutorial 3**	2	DM2		
27	30-07-2015	Bi-directional Search, comparing uninform search strategies	2	DM1		
28	31-07-2015	Introduction to Heuristic search strategies	2	DM1		
29	01-08-2015	Greedy best-first search	2	DM1		
30	03-08-2015	A* search	2	DM6		
31	05-08-2015	**Tutorial 4**	2	DM2		
32	06-08-2015	Memory bounded heuristic search	2	DM1		
33	07-08-2015	Local search algorithms & optimization problems	2	DM1		
34	08-08-2015	Hill climbing search, simulated annealing search	2	DM1		
35	10-08-2015	Local beam search, Genetic algorithms	2	DM1		
36	12-08-2015	**Tutorial 5**	2	DM2		
37	13-08-2015	Constraint satisfaction problems	2	DM1		
38	14-08-2015	Local search for constraint satisfaction problems	2	DM1		
39	17-08-2015					
40	19-08-2015					
41	20-08-2015					
42	21-08-2015	**I MID EXAMINATIONS**				
43	22-08-2015					
44	24-08-2015	**UNIT III:** Introduction to Knowledge	3	DM1		

45	26-08-2015	**Tutorial 6**	3	DM2		
46	27-08-2015	Knowledge representation issues	3	DM1		
47	28-08-2015	Representation & Mapping	3	DM1		
48	29-08-2015	Approaches to Knowledge representation	3	DM1		
49	31-08-2015	Issues in Knowledge representation	3	DM1		
50	02-09-2015	**Tutorial 7**	3	DM2		
51	03-09-2015	Introduction to Predicate Logic	3	DM1		
52	04-09-2015	Representing simple fact in logic	3	DM1		
53	07-09-2015	Representing instant	3	DM1		
54	09-09-2015	**Tutorial 8**	3	DM2		
55	10-09-2015	ISA relationship	3	DM1		
56	11-09-2015	Computable functions & predicates	3	DM1		
57	12-09-2015	Resolution, natural deduction	3	DM1		
58	14-09-2015	**UNIT IV:** Introduction to knowledge	4	DM6		
59	16-09-2015	**Tutorial 9**	3	DM2		
60	18-09-2015	Representing knowledge using rules	4	DM1		
61	19-09-2015	Procedural vs. declarative knowledge	4	DM1		
62	21-09-2015	Logic programming	4	DM6		
63	23-09-2015	**Tutorial 10**	4	DM2		
69	25-09-2015	Forward reasoning	4	DM1		
70	26-09-2015	Backward reasoning	4	DM1		
71	28-09-2015	Matching	4	DM3		
72	30-09-2015	**Tutorial 11**	4	DM2		
73	01-10-2015	Control knowledge	4	DM1		

74	03-10-2015	**UNIT V:** Introduction to reasoning	5	DM1		
75	05-10-2015	Probabilistic reasoning	5	DM1		
76	07-10-2015	**Tutorial 12**	5	DM2		
77	08-10-2015	Introduction to uncertain domain	5	DM1		
78	09-10-2015	Representing knowledge in an uncertain domain	5	DM1		
79	10-10-2015	The semantics of Bayesian networks	5	DM6		
80	12-10-2015	The semantics of Bayesian networks	5	DM6		
81	14-10-2015	**Tutorial 13**	5	DM2		
82	15-10-2015	Dempster-Shafertheory example	5	DM1		
83	16-10-2015	Introduction to Fuzzy sets	5	DM1		
84	17-10-2015	Fuzzy set examples	5	DM1		
85	26-10-2015	Introduction to Fuzzy Logics	5	DM1		
86	28-10-2015	**Tutorial 14**	5	DM2		
87	29-10-2015	Revision	3,4	DM3		
88	30-10-2015	Revision	5	DM3		
89	31-10-2015	Previous question papers discussion		DM6		
90	02-11-2015					
91	03-11-2015					
92	04-11-2015					
93	05-11-2015	**II MID EXAMINATIONS**				
94	06-11-2015					
95	07-11-2015					

NOTE: DELIVERY METHODS:

DM1: Lecture interspersed with discussions/BB,

DM2: Tutorial
DM3: Lecture with a quiz

DM4: Assignment/Test,

DM5: Demonstration (laboratory, field visit)
DM6: Presentations/PPT

At the End of the course, students attained the **Course Outcomes: CO1, CO2, CO3, CO4, CO5** & sample proofs are enclosed in Course file.

Course Delivery:

UNIT	UNIT I			UNIT II				UNIT III			UNIT IV			UNIT V		
WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

	Prepared by	Approved by
Signature		
Name	**N.SrinivasaRao**	**Dr. N. Ravi Sankar**
Designation	**Asst.Professor/CSE**	**HOD Dept. of CSE**
Date	**20-6-2015**	

UNIT - I

Introduction: Overview of Artificial intelligence- Problems of AI, AI technique, Tic-Tac-Toe problem.

Intelligent Agents: Agents & environment, nature of environment, structure of agents, goal based agents, utility based agents, learning agents. Problem Solving: Problems, Problem Space &search: Defining the problem as state space search, production system, problem characteristics, and issues in the design of search programs.

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Search techniques: Solving problems by searching: problem solving agents, searching for solutions; uniform search strategies: breadth first search, depth first search, depth limited search, bi-directional search, comparing uniform search strategies.

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Using predicate logic: Representing simple fact in logic, representing instant & ISA relationship, computable functions &predicates, resolution, natural deduction.

UNIT - IV

Representing knowledge using rules: Procedural verses declarative knowledge, logic programming, forward verses backward reasoning, matching, control knowledge.

UNIT - V

Reasoning: Probabilistic reasoning: Representing knowledge in an uncertain domain, the semantics of Bayesian networks, Dempster-Shafertheory, Fuzzy sets & fuzzy logics.

TEXT BOOK

Artificial Intelligence, Ritch & Knight, TMH

REFERENCES

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ARTIFICIAL INTELLIGENCE

Course Educational Objectives and Outcomes (CEOs & COs)

Course Educational objectives (CEOs):

1. Different types of AI techniques and their implementation.

2. Types of agents and activities of agents.

3. Different problem solving techniques and problem characteristics.

4. Various searching strategies and their implementations.

5. Representation of knowledge using predicate logic.

6. Representation of knowledge using prepositional logic.

7. Knowledge rules using reasoning.

8. Knowledge rules using matching.

9. Reasoning using fuzzy sets and fuzzy logics.

Course Outcomes (Cos):

Upon the successful completion of this course students will be able to:

CO1: Understand about AI techniques and different ways to implement them and deals about the techniques and set of rules to find solutions in problem solving.

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CO3: Understand about knowledge, represent different issues in knowledge, and present various ways to represent it, implement predicate and propositional knowledge and present logic resolution and unification techniques.

CO4: Present different types of knowledge and reasoning techniques, understand about logic programming and PROLOG, and implement indexing and matching techniques.

CO5: Present uncertainty in knowledge and various techniques to solve it. Present efficient techniques to remove uncertainty in knowledge domain.

S.No	Date (Tentative)	Topics to be covered	Unit No.	Teaching Method/ Aid	Actual Date	Remarks/ Sign
1	23-06-2015	**UNIT I:** Introduction to Artificial Intelligence	1	DM1		
2	24-06-2015	Overview of Artificial Intelligence	1	DM1		
3	25-06-2015	Problems of AI	1	DM1		
4	26-06-2015	AI Techniques	1	DM1		
5	27-06-2015	**Tutorial 1**	1	DM2		
6	**30-06-2015**					
7	**01-07-2015**					
8	**02-07-2015**					
9	**03-07-2015**					
10	**04-07-2015**					

11	07-07-2015					
12	08-07-2015	Tic-Tac-Toe Problem	1	DM6		
13	09-07-2015	Introduction to Agents, Agents & Environment	1	DM1		
14	10-07-2015	Nature of Environment, Structure of Agents	1	DM1		
15	11-07-2015	**Tutorial 2**	1	DM2		
16	14-07-2015	Reflex agents, Goal based agents	1	DM6		
17	15-07-2015	Utility based agents, Learning agents	1	DM6		
18	16-07-2015	Problem solving, Problem Space & search	1	DM1		
19	17-07-2015	Define Problem as state space search, Water Jug problem	1	DM6		
20	21-07-2015	Production system, Problem characteristics	1	DM1		
21	22-07-2015	Issues in the design of search programs	1	DM1		
22	23-07-2015	**UNIT II:** Solving problems by searching	2	DM1		
23	24-07-2015	Problem solving agents, searching for solutions	2	DM1		
24	25-07-2015	**Tutorial 4**	1	DM2		
25	28-07-2015	Uninformed searching strategies, BFS (Breadth first search)	2	DM1		
26	29-07-2015	Depth first search(DFS), DLS	2	DM1		
27	30-07-2015	Bi-directional Search, comparing uninformed search strategies	2	DM1		
28	31-07-2015	Introduction to Heuristic search strategies	2	DM1		
29	01-08-2015	**Tutorial 4**	2	DM2		
30	04-08-2015	Greedy best-first search	2	DM1		

31	05-08-2015	A* search	2	DM6		
32	06-08-2015	Memory bounded heuristic search	2	DM1		
33	07-08-2015	Local search algorithms & optimization problems	2	DM1		
34	11-08-2015	Hill climbing search, simulated annealing search	2	DM1		
35	12-08-2015	Local beam search, Genetic algorithms	2	DM1		
36	13-08-2015	Constraint satisfaction problems	2	DM1		
37	14-08-2015	Local search for constraint satisfaction problems	2	DM1		
38	18-08-2015					
39	19-08-2015	**I MID EXAMINATIONS**				
40	20-08-2015					
41	21-08-2015					
42	22-08-2015					
43	25-08-2015	**UNIT III:** Introduction to Knowledge	3	DM1		
44	26-08-2015	Knowledge representation issues	3	DM1		
45	27-08-2015	Representation & Mapping	3	DM1		
46	28-08-2015	Approaches to Knowledge representation	3	DM1		
47	29-08-2015	**Tutorial 5**	3	DM2		
48	01-09-2015	Issues in Knowledge representation	3	DM1		
49	02-09-2015	Introduction to Predicate Logic	3	DM1		
50	03-09-2015	Representing simple fact in logic	3	DM1		
51	04-09-2015	Representing instant	3	DM1		
52	08-09-2015	Revision	3	DM3		
53	09-09-2015	ISA relationship	3	DM1		

54	10-09-2015	Computable functions & predicates	3	DM1		
55	11-09-2015	Resolution, natural deduction	3	DM1		
56	12-09-2015	**Tutorial 7**	3	DM2		
57	15-09-2015	**UNIT IV:** Introduction to knowledge	4	DM6		
58	16-09-2015	Representing knowledge using rules	4	DM1		
59	18-09-2015	Procedural vs. declarative knowledge	4	DM1		
60	19-09-2015	**Tutorial 8**	4	DM2		
61	22-09-2015	Logic programming	4	DM1		
62	23-09-2015	Forward reasoning	4	DM6		
63	24-09-2015	Backward reasoning	4	DM1		
64	25-09-2015	Matching	4	DM1		
65	29-09-2015	Control knowledge	4	DM1		
66	30-09-2015	Revision	4	DM3		
67	01-10-2015	**UNIT V:** Introduction to reasoning	5	DM1		
68	03-10-2015	**Tutorial 9**	5	DM2		
69	06-10-2015	Probabilistic reasoning Introduction to uncertain domain	5	DM1		
70	07-10-2015	Representing knowledge in an uncertain domain	5	DM1		
71	08-10-2015	The semantics of Bayesian networks	5	DM6		
72	09-10-2015	The semantics of Bayesian networks	5	DM6		
73	10-10-2015	**Tutorial 10**	5	DM5		
74	13-10-2015	Test	3,4	DM4		
75	14-10-2015	Dempster-Shafertheory	5	DM1		
76	15-10-2015	Dempster-Shafertheory example	5	DM1		

77	16-10-2015	Introduction to Fuzzy sets	5	DM1		
78	17-10-2015	**Tutorial 11**	5	DM2		
79	27-10-2015	Fuzzy set examples	5	DM1		
80	28-10-2015	Introduction to Fuzzy Logics	5	DM1		
81	29-10-2015	Revision	5	DM3		
82	30-10-2015	Previous question papers discussion		DM6		
83	31-10-2015	**Tutorial 12**	5	DM2		
84	03-11-2015					
85	04-11-2015	**II MID EXAMINATIONS**				
86	05-11-2015					
87	06-11-2015					
88	07-11-2015					

NOTE: DELIVERY METHODS:

DM1: Lecture interspersed with discussions/BB,

DM2: Tutorial
DM3: Lecture with a quiz

DM4: Assignment/Test,

DM5: Demonstration (laboratory, field visit)
DM6: Presentations/PPT

At the End of the course, students attained the **Course Outcomes: CO1, CO2, CO3, CO4, CO5** & sample proofs are enclosed in Course file.

Course Delivery:

UNIT	UNIT I			UNIT II				UNIT III			UNIT IV			UNIT V		
WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

	Prepared by	Approved by
Signature		
Name	N.SrinivasaRao	Dr. N. Ravi Sankar
Designation	Asst.Professor/CSE	HOD Dept. of CSE
Date	20-6-2015	

T101 –ADVANCED COMPUTER ARCHITECTURE

Lecture	: 4 Periods/week	**Internal Marks**	: 25
Tutorial	: 1	**External Marks**	: 75
Credits	: 4	**External Examination**	: 3 Hrs

UNIT- I
Fundamentals of computer design.-technology trends-cost-measuring and reporting Performance. Quantitative principles of computer design.

UNIT – II
Instruction set principles and examples- classifying instruction set- memory addressing- type and size of Operands- addressing modes for signal processing-operations in the instruction set- instructions for control Flow- encoding an instruction set.-the role of compiler

UNIT- III
Instruction level parallelism (ILP)- over coming data hazards- reducing branch costs –high performance instruction delivery- hardware based speculation- ILP software approach- compiler techniques- static branch protection - VLIW approach

UNIT- IV
Memory hierarchy design- cache performance- reducing cache misses penalty and miss rate – virtual memory- protection and examples of VM.

UNIT- V
Multiprocessors and thread level parallelism- symmetric shared memory architectures-distributed shared memory- Synchronization- multi threading.

TEXT BOOK
Computer Architecture A quantitative approach 3rd edition
John L. Hennessy & David A. Patterson Morgan Kufmann (An Imprint of Elsevier)

REFERENCES
1. Advanced Computer Architectures, Dezso Sima, Terence Fountain, Peter Kacsuk, Pearson.

2. Parallel Computer Architecture, A Hardware / Software Approach, David E. Culler, Jaswinder Pal singh with Anoop Gupta, Elsevier

3. H. Stone.Advanced Computer Architecture, Addison Wesley, 1989.

4. H. J. Siegel.Interconnection Network for Large Scale Parallel Processing, McGraw Hill, 1990.

5. K. Hwang and F. A. Briggs.Computer Architecture and Parallel Processing, McGraw Hill, 1985

ADVANCED COMPUTER ARCHITECTURE

<u>Course Educational Objectives and Outcomes (CEOs & Cos)</u>

Course Educational objectives (CEOs):

1. How computer systems work & its basic principles.
2. How to analyse the system performance.
3. Concepts behind advanced pipelining techniques.
4. The current state of art in memory system design.
5. How I/O devices are being accessed and its principles.
6. To provide the knowledge on instruction level parallelism
7. To provide the knowledge on memory hierarchy design
8. To provide the knowledge on multiprocessor and thread level parallelism

Course Outcomes (Cos):

After completion of the course, students will able to:

CO1: To apply knowledge of performance metrics to find performance of systems

CO2: To design a hardware component for an embedded system and learn different types of

Computers

CO3: To Identify high performance architecture design and problems in components of

Computer

CO4: To develop independent learning skills in different computer architectures and hardware.

CO5: To learn and use the new technologies in computers and use knowledge of

Microprogramming in the field of speech processing.

LESON PLAN

S.No.	Date (Tentative)	Topics to be covered	Unit No.	Teaching Method/ Aid	R Remarks/ Sign
1	22-06-2015	**Unit I:introduction**	1	DM6	
2	23-06-2015	History of computer and basics	1	DM1	
3	25-06-2015	Fundamental of computers	1	DM1	
4	26-06-2015	Design of fundamental computers	1	DM1	
5	27-06-2015	Changing phases of computer	1	DM1	
6	**29-06-2015**				
7	**01-07-2015**				
8	**02-07-2015**				
9	**03-07-2015**	*Campus Recruitment Training(CRT)*			
10	**04-07-2015**	*Classes*			
11	**06-07-2015**				
12	08-07-2015	Trends in technology	1	DM2	
13	09-07-2015	**Tutotial-1**	1	DM1	

14	10-07-2015	Impact of time volume and commodification			
15	11-07-2015	Cost of integrated circuit	1	DM2	
16	15-07-2015	Measuring and reporting performance	1	DM1	
17	16-07-2015	**Tutotial-2**	1	DM1	
18	17-07-2015	Choosing programs to evaluate performance	1		
19	20-07-2015	Quantitative principals of computer design	1		
19	22-07-2015	Amdahl's law	1	DM2	
20	23-07-2015	Cpu performance equation	1		
21	24-07-2015	**Unit 2:** classifying instruction set architecture	2	DM1	
22	25-07-2015	Interpreting memory addressing	2	DM1	
23	27-07-2015	Addressing modes	2	DM6	
24	29-07-2015	Frequency of addressing modes	2	DM1	
25	30-07-2015	Type and size of operands			
26	31-07-2015	Operations on type and size of operands		DM1	
27	01-08-2015	Operations in the instruction set	2	DM1	
28	03-08-2015	Instructions control flow	2	DM1	
29	07-08-2015	Procedure call/returns	2	DM1	
30	10-08-2015	**Tutorial 3**	2	DM2	
31	12-08-2015	Encoding an instruction set	2	DM1	
32	13-08-2015	The role of the compiler	2	DM1	
33	14-08-2015	**Tutorial 4**	2	DM2	
34	17-08-2015				
35	18-08-2015				
36	19-08-2015	**MID I**			
37	20-08-2015				

38	21-08-2015				
39	22-08-2015				
40	24-08-2015	**UNIT 3 :**overcoming data hazards	3	DM1	
41	26-08-2015	Reducing branch costs	3	DM1	
42	27-08-2015	High performance instruction delevery	3	DM1	
43	28-08-2015	**Tutorial 5**	3	DM2	
44	29-08-2015	Hardware based speculation	3	DM6	
45	31-08-2015	ILP software approach	3	DM1	
46	02-09-2015	Compiler techniques	3	DM1	
47	03-09-2015	Static branch protection	3	DM6	
48	04-09-2015	Vlip approach	3	DM1	
49	05-09-2015	Vlip app	3	DM1	
50	07-09-2015	**Tutorial 6**	3	DM2	
51	09-09-2015	Revision of unit 3	3	DM1	
52	10-09-2015	Revision of unit3	3	DM1	
53	11-09-2015	**Tutorial 7**	3	DM2	
54	12-09-2015	**UNIT 4: introduction**	4	DM6	
55	14-09-2015	Memory hierarchy design	4	DM6	
56	16-09-2015	Cache performance	4	DM2	
57	18-09-2015	Reducing caches	4	DM1	
58	19-09-2015	Misses penalty and rate	4	DM1	
59	21-09-2015	**Tutorial 8**	4	DM2	
60	23-09-2015	Virtual memory	4	DM1	
61	24-09-2015	Protection	4	DM1	
62	26-09-2015	Examples of virtual memory	4	DM6	
63	28-09-2015	**Tutorial 9**	4	DM2	
64	30-09-2015	Revision of unit 4	4	DM1	
65	01-10-2015	Revision of unit 4	4	DM1	

66	03-10-2015	**Unit 5:introduction**	5	DM1	
67	05-10-2015	Multiprocessors and thread level parallelism	5	DM6	
68	07-10-2015	Symmetric shared memory	5	DM6	
69	08-10-2015	Architecture	5	DM1	
70	09-10-2015	Types of architecture	5	DM1	
71	10-10-2015	Distributed shared memory	5	DM1	
72	12-10-2015	Distrusted shared memory	5	DM1	
73	14-10-2015	Synchronization	5	DM1	
74	15-10-2015	Continuing synchronization	5	DM1	
75	16-10-2015	Multi-threading	5	DM1	
76	17-10-2015	Multi-threading contd	5	DM1	
77	26-10-2015	**Tutorial 10**	5	DM2	
78	28-10-2015	Revision unit 5	5	DM1	
79	29-10-2015	Discussions of previous papers		DM1	
80	30-10-2015	Discussions of previous papers		DM1	
81	31-10-2015	Test1 on model papers		DM4	
82	02-11-2015				
83	03-11-2015				
84	04-11-2015				
85	05-11-2015	**II MID EXAMINATIONS**			
86	06-11-2015				
87	07-11-2015				

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DM5:Demonstration(laboratory, field visit), **DM6:** Presentations/PPT

At the End of the course, students attain the

Course Outcomes:CO1,CO2,CO3, CO4,CO5 & sample proofs are enclosed at the end of the Course file(After Completion of the Course)

Course Delivery:

UNIT	1		2		3	4					5			
WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

	Prepared by	Approved by
Signature		
Name	N V NAIK	HOD/CSE
Designation	Asst.Professor/CSE	Dr.N.Ravi Sankar
Date	20.06.2015	

T101 –ADVANCED COMPUTER ARCHITECTURE

Lecture	: 4 Periods/week	**Internal Marks**	: 25
Tutorial	: 1	**External Marks**	: 75
Credits	: 4	**External Examination**	: 3 Hrs

UNIT- I
Fundamentals of computer design.-technology trends-cost-measuring and reporting Performance. Quantitative principles of computer design.

UNIT – II
Instruction set principles and examples- classifying instruction set- memory addressing- type and size of Operands- addressing modes for signal processing-operations in the instruction set- instructions for control Flow- encoding an instruction set.-the role of compiler

UNIT- III
Instruction level parallelism (ILP)- over coming data hazards- reducing branch costs –high performance instruction delivery- hardware based speculation- ILP software approach- compiler techniques- static branch protection - VLIW approach

UNIT- IV
Memory hierarchy design- cache performance- reducing cache misses penalty and miss rate – virtual memory- protection and examples of VM.

UNIT- V
Multiprocessors and thread level parallelism- symmetric shared memory architectures-distributed shared memory- Synchronization- multi threading.

TEXT BOOK
Computer Architecture A quantitative approach 3rd edition
John L. Hennessy & David A. Patterson Morgan Kufmann (An Imprint of Elsevier)

REFERENCES
1. Advanced Computer Architectures, Dezso Sima, Terence Fountain, Peter Kacsuk, Pearson.

2. Parallel Computer Architecture, A Hardware / Software Approach, David E. Culler, Jaswinder Pal singh with Anoop Gupta, Elsevier

3. H. Stone.Advanced Computer Architecture, Addison Wesley, 1989.

4. H. J. Siegel.Interconnection Network for Large Scale Parallel Processing, McGraw Hill, 1990.

5. K. Hwang and F. A. Briggs.Computer Architecture and Parallel Processing, McGraw Hill, 1985

ADVANCED COMPUTER ARCHITECTURE

Course Educational Objectives and Outcomes (CEOs & Cos)

Course Educational objectives (CEOs):

9. How computer systems work & its basic principles.
10. How to analyse the system performance.
11. Concepts behind advanced pipelining techniques.
12. The current state of art in memory system design.
13. How I/O devices are being accessed and its principles.
14. To provide the knowledge on instruction level parallelism
15. To provide the knowledge on memory hierarchy design
16. To provide the knowledge on multiprocessor and thread level parallelism

Course Outcomes (Cos):

After completion of the course, students will able to:

CO1: To apply knowledge of performance metrics to find performance of systems

CO2: To design a hardware component for an embedded system and learn different types of

Computers

CO3: To Identify high performance architecture design and problems in components of

Computer

CO4: To develop independent learning skills in different computer architectures and hardware.

CO5: To learn and use the new technologies in computers and use knowledge of

Microprogramming in the field of speech processing.

LESON PLAN

S.No.	Date (Tentative)	Topics to be covered	Unit No.	Teaching Method/ Aid	R _Remarks/ Sign_
1	22-06-2015	**Unit I:introduction**	1	DM6	
2	24-06-2015	Fundamentals of computer design	1	DM1	
3	25-06-2015	Fundamental of computers	1	DM1	
4	26-06-2015	Changing phases of computer	1	DM1	
5	27-06-2015	Trends in technology	1	DM1	
6	**29-06-2015**				
7	**30-07-2015**				
8	**02-07-2015**				
9	**03-07-2015**	_Campus Recruitment Training(CRT)_			
10	**04-07-2015**	_Classes_			
11	**06-07-2015**				
12	**07-07-2015**				
13	09-07-2015	Cost and price**Tutotial-1**	1	DM1	
14	10-07-2015	Impact of time volume and commodification			
15	11-07-2015	Cost of integrated circuit	1	DM2	

16	14-07-2015	Measuring and reporting performance	1	DM1	
17	16-07-2015	**Tutotial-2**	1	DM1	
18	17-07-2015	Choosing programs to evaluate performance	1		
19	20-07-2015	Quantitative principals of computer design	1		
20	21-07-2015	Amdahl's law	1	DM2	
21	23-07-2015	Cpu performance equation	1		
22	24-07-2015	**Unit 2:** classifying instruction set architecture	2	DM1	
23	25-07-2015	Interpreting memory addressing	2	DM1	
24	30-07-2015	Type and size of operands			
25	31-07-2015	Operations on type and size of operands			
26	01-08-2015	Operations in the instruction set	2	DM1	
27	03-08-2015	Instructions control flow	2	DM1	
28	04-08-2015				
29	06-08-2015				
30	07-08-2015	Procedure call/returns	2	DM1	
31	10-08-2015	**Tutorial 3**	2	DM2	
32	12-08-2015	Encoding an instruction set	2	DM1	
33	13-08-2015	The role of the compiler	2	DM1	
34	14-08-2015	**Tutorial 4**	2	DM2	
35	17-08-2015				
36	18-08-2015				
37	19-08-2015	**MID I**			
38	20-08-2015				
39	21-08-2015				
40	22-08-2015				
41	24-08-2015	**UNIT 3 :**overcoming data hazards	3	DM1	

42	25-08-2015	Reducing branch costs	3	DM1	
43	27-08-2015	High performance instruction delevery	3	DM1	
44	28-08-2015	**Tutorial 5**	3	DM2	
45	29-08-2015	Hardware based speculation	3	DM6	
46	31-08-2015	ILP software approach	3	DM1	
47	01-09-2015	Compiler techniques	3	DM1	
48	03-09-2015	Static branch protection	3	DM6	
49	04-09-2015	Vlip approach	3	DM1	
50	05-09-2015	Vlip app	3	DM1	
51	07-09-2015	**Tutorial 6**	3	DM2	
52	08-09-2015	Revision of unit 3	3	DM1	
53	10-09-2015	Revision of unit3	3	DM1	
54	11-09-2015	**Tutorial 7**	3	DM2	
55	12-09-2015	**UNIT 4: introduction**	4	DM6	
56	14-09-2015	Memory hierarchy design	4	DM6	
57	16-09-2015	Cache performance	4	DM2	
58	17-09-2015	Reducing caches	4	DM1	
59	19-09-2015	Misses penalty and rate	4	DM1	
60	21-09-2015	**Tutorial 8**	4	DM2	
61	22-09-2015	Virtual memory	4	DM1	
62	24-09-2015	Protection	4	DM1	
63	26-09-2015	Examples of virtual memory	4	DM6	
64	28-09-2015	**Tutorial 9**	4	DM2	
65	29-09-2015	Revision of unit 4	4	DM1	
66	01-10-2015	Revision of unit 4	4	DM1	
67	03-10-2015	**Unit 5:introduction**	5	DM1	
68	06-10-2015	Symmetric shared memory	5	DM6	
69	08-10-2015	Architecture	5	DM1	

70	09-10-2015	Types of architecture	5	DM1	
71	10-10-2015	Distributed shared memory	5	DM1	
72	12-10-2015	Distrusted shared memory	5	DM1	
73	13-10-2015	Synchronization	5	DM1	
74	15-10-2015	Continuing synchronization	5	DM1	
75	16-10-2015	Multi-threading	5	DM1	
76	17-10-2015	Multi-threading contd	5	DM1	
77	26-10-2015	**Tutorial 10**	5	DM2	
78	27-10-2015	Revision unit 5	5	DM1	
79	29-10-2015	Discussions of previous papers		DM1	
80	30-10-2015	Discussions of previous papers		DM1	
81	31-10-2015	Test1 on model papers		DM4	
82	02-11-2015				
83	03-11-2015				
84	04-11-2015				
85	05-11-2015	**II MID EXAMINATIONS**			
86	06-11-2015				
87	07-11-2015				

NOTE: *DELIVERY METHODS* :

DM1: Lecture interspersed with discussions/BB,

DM2: Tutorial, **DM3:** Lecture with a quiz, **DM4**: Assignment/Test,

DM5:Demonstration(laboratory, field visit), **DM6:** Presentations/PPT

At the End of the course, students attain the

Course Outcomes:CO1,CO2,CO3, CO4,CO5 & sample proofs are enclosed at the end of the Course file(After Completion of the Course)

Course Delivery:

UNIT	1		2			3	4					5			
WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

	Prepared by	Approved by
Signature		
Name	N V NAIK	HOD/CSE
Designation	Asst.Professor/CSE	Dr.N.Ravi Sankar
Date	20.06.2015	

P859 : MOBILE COMMUNICATIONS LAB

Lecture	: 3 Periods/week	**Internal Marks**	: 25
Tutorial		**External Marks**	: 75
Credits	: 2	**External Examination**	: 3
Hrs			

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Implementing and verifying the performance of protocols using Network Simulator 2 (ns2) and OPNET Simulator.

1.   Installation of ns2 in Linux

2.   Installation of OPNET simulator

3.   Testing ns2 working

4.   Performance evaluation of wireless networks

5.   Performance Evaluation 802.11

6.   Performance Evaluation of AODV protocol

7.   Performance Evaluation of DSDV Protocol

8.   Using Directional Antennas in Wireless Communication

9.   Performance Evaluation of DVCS in ns2.

10.   Performance Evaluation of Routing Protocols in ns2.

11.

COURSE OBJECTIVES:

✓ The first objective of this course is to give basic concepts relating to wireless and mobile communications and development of cellular communication infra structure.

✓ The second objective is to describe the basic working and engineering techniques of Optical Fiber Communications

✓ To learn the engineering principles and system evaluation methods used in the design of mobile communications networks.

COURSE OUTCOMES:

✓ A student who successfully fulfills the course requirements will have demonstrated.

✓ At successful completion of this course the students will be familiar with cellular network design and planning with a special focus on GSM and CDMA.

✓ The course will also provide the basic knowledge of optical communication.

✓ The students will come to know how efficient and better optical efficiency of devices can be achieved.

✓ The student will have the ability to work in advanced research wireless and mobile cellular technol

Program: 1

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
1	Installation of ns2 in Linux	24/06/2015 03/07/2015	DM4/DM6	

Program: 2

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
2	Installation of OPNET simulator	10/07/2015 17/07/2015	DM4/DM6	

Program: 3

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
3	Testing ns2 working	24/07/2015 31/07/2015	DM4/DM6	

Program: 4

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
4	Performance evaluation of wireless networks	07/08/2015 14/08/2015	DM4/DM6	

Program: 5

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
5	Performance Evaluation 802.11	21/08/2015 28/08/2015	**DM4/DM6**	

Program: 6

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
6	Performance Evaluation of AODV protocol	4/09/2015 11/09/2015	DM4/DM6	

Program: 7

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
7	Performance Evaluation of DSDV Protocol	18/09/2015	DM4/DM6	

Program: 8

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
8	Using Directional Antennas in Wireless Communication	25/09/2015	DM4/DM6	

Program: 9

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
9	Performance Evaluation of DVCS in ns2.	9/10/2015 16/09/2015	DM4/DM6	

Program:10

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
10	Performance Evaluation of Routing Protocols in ns2.	23/10/2015	DM4/DM6	

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
11	**INTERNAL EXAM**	30/10/2015		

	Prepared by	Approved by
Signature		
Name	**G.BALU NARASIMHARAO**	**HOD/CSE**
Designation	**Assistant Professor/CSE**	**Professor**
Date	**15/6/2015**	

P859 : MOBILE COMMUNICATIONS LAB

Lecture	: 3 Periods/week	**Internal Marks**	: 25
Tutorial		**External Marks**	: 75
Credits **Hrs**	: 2	**External Examination**	: 3

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Implementing and verifying the performance of protocols using Network Simulator 2 (ns2) and OPNET Simulator.

12.   Installation of ns2 in Linux

13.   Installation of OPNET simulator

14.   Testing ns2 working

15.   Performance evaluation of wireless networks

16.   Performance Evaluation 802.11

17.   Performance Evaluation of AODV protocol

18.   Performance Evaluation of DSDV Protocol

19.   Using Directional Antennas in Wireless Communication

20.   Performance Evaluation of DVCS in ns2.

21.   Performance Evaluation of Routing Protocols in

COURSE OBJECTIVES:

- ✓ The first objective of this course is to give basic concepts relating to wireless and mobile communications and development of cellular communication infra structure.

- ✓ The second objective is to describe the basic working and engineering techniques of Optical Fiber Communications

- ✓ To learn the engineering principles and system evaluation methods used in the design of mobile communications networks.

COURSE OUTCOMES:

- ✓ A student who successfully fulfills the course requirements will have demonstrated.

- ✓ At successful completion of this course the students will be familiar with cellular network design and planning with a special focus on GSM and CDMA.

- ✓ The course will also provide the basic knowledge of optical communication.

- ✓ The students will come to know how efficient and better optical efficiency of devices can be achieved.

- ✓ The student will have the ability to work in advanced research wireless and mobile cellular technologies.

	LESSON PLAN	Date: 22-06-15
	Sub Code & Sub Name: P859 & Mobile Communications **Branch: CSE-Bsec Year:IV. B.Tech Semester : VII**	EWD:31-10-15

Program: 1

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
1	Installation of ns2 in Linux	24/06/2015 01/07/2015	DM4/DM6	

Program: 2

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
2	Installation of OPNET simulator	8/07/2015 15/07/2015	DM4/DM6	

Program: 3

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
3	Testing ns2 working	22/07/2015 29/07/2015	DM4/DM6	

Program: 4

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
4	Performance evaluation of wireless networks	05/08/2015 12/08/2015	DM4/DM6	

Program: 5

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
5	Performance Evaluation 802.11	19/08/2015 26/08/2015	**DM4/DM6**	

Program: 6

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
6	Performance Evaluation of AODV protocol	2/09/2015 9/09/2015	DM4/DM6	

Program: 7

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
7	Performance Evaluation of DSDV Protocol	16/09/2015	DM4/DM6	

Program: 8

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
8	Using Directional Antennas in Wireless Communication	23/09/2015	DM4/DM6	

Program: 9

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
9	Performance Evaluation of DVCS in ns2.	30/09/2015 07/10/2015	DM4/DM6	

Program:10

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
10	Performance Evaluation of Routing Protocols in ns2.	14/10/2015	DM4/DM6	

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
11	Revision.	21/10/2015	DM4/DM6	

Session No	Topics to be covered	Actual Date	Teaching Method	Tentative Date
12	**INTERNAL EXAM**	28/10/2015		

	Prepared by	Approved by
Signature		
Name	**G.BALU NARASIMHARAO**	**Dr.N.Ravi Shankar**
Designation	**Assistant Professor/CSE**	**Professor, HOD/CSE**
Date	**25/6/2015**	

T152 – DATA MINING AND DATA WAREHOUSING

Lecture	: 4 Periods/week	**Internal Marks**	: 25
Tutorial	: 1	**External Marks**	: 75
Credits	: 4	**External Examination**	: 3 Hrs

UNIT - I

Introduction, Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture, Implementation, Further Development, Data Warehousing to Data Mining

UNIT - II

Why Preprocessing, Cleaning, Integration, Transformation, Reduction, Discretization, Concept Hierarchy Generation, Data Mining Primitives, Query Language, Graphical User Interfaces, Architectures, Concept Description, Data Generalization, Characterizations, Class Comparisons, Descriptive Statistical Measures

UNIT - III

Association Rule Mining, Single-Dimensional Boolean Association Rules from Transactional Databases, Multi-Level Association Rules from Transaction Databases

UNIT - IV

Classification and Prediction, Issues, Decision Tree Induction, Bayesian Classification, Association Rule Based, Other Classification Methods, Prediction, Classifier Accuracy, Cluster Analysis, Types of data, Categorisation of methods, Partitioning methods, Outlier Analysis.

UNIT - V

Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Spatial Databases, Multimedia Databases, Time Series and Sequence Data, Text Databases, World Wide Web, Applications and Trends in Data Mining

TEXTBOOK

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

<u>REFERENCES</u>

1. SamAnahory,DennisMurry, "DataWarehousing in the real world", Pearson Education 2003.
2. DavidHand,HeikkiManila,PadhraicSymth,"Principles of Data Mining", PHI 2004.
3. W.H.Inmon,"Building the Data Warehouse", 3rd Edition, Wiley, 2003.
4. Paulraj Ponniah, "Data Warehousing Fundamentals", Wiley-Interscience Publication, 2003.

DATAMINING AND DATA WAREHOUSING

Course Educational Objectives and Outcomes (CEOs & Cos)

Course Educational objectives (CEOs):

17. Define a Data warehouse and Data Mining system
18. Understand the basic concepts of data mining
19. Interpret the contribution of data warehousing and data mining to the decision support level of the organizations.
20. Evaluate different models used for OLAP and data pre-processing
21. Introduce the concept of data mining with in detail coverage of basic tasks, metrics, issues, and implication.
22. Core topics like classification, clustering and association rules are exhaustively dealt with.
23. To introduce the concept of data warehousing with special emphasis on architecture and design.
24. Categorise and carefully differentiate between different data mining frequent pattern, Association, correlation, Classification, prediction, and cluster analysis.
25. Design and implement systems for data mining.
26. Evaluate the performance of different data mining algorithms
27. Propose data mining solutions for different applications

Course Outcomes(Cos):

By the completion of the course, the students should be able to:

1. Understand the concept of Data Mining, Data Warehouse.
2. Apply data pre-processing techniques and generalization techniques.
3. Ability to identify Associations in large databases using different techniques.
4. Understand various classification and clustering techniques for large databases
5. Apply data mining techniques to complex data objects.

LESSON PLAN

S.No.	Date (Tentative)	Topics to be covered	Unit No.	Teaching Method/ Aid	aA Actual Date	R Remarks/ Sign
1	22-06-2015	**UNIT-I :** Syllabus overview - Introduction	1	DM6		
2	23-06-2015	Introduction-Data,Info. Importance of DMDW	1	DM1		
3	24-06-2015	Data warehouse briefing	1	DM6		
4	25-06-2015	Data warehouse Need	1	DM1		
5	27-06-2015	OLTP vs OLAP	1	DM1		
6	**29-06-2015**					
7	**30-06-2015**					
8	**01-07-2015**					
9	**02-07-2015**	*Campus Recruitment Training(CRT)*				
10	**04-07-2015**					
11	**06-07-2015**	*Classes*				
12	**07-07-2015**					
13	08-07-2015	Data Cube, Lattice of Cuboid, Schemas Types	1	DM2		
14	09-07-2015	**Tutotial-1**	1	DM2		
15	11-07-2015	Concept Hierarchy, OLAP Operations	1	DM2		
16	14-07-2015	DWH Architecture	1	DM6		
17	15-07-2015	Types of OLAP servers, Meta Data Repository	1	DM1		

18	16-07-2015	DWH Implementation **Tutotial-2**	1	DM2		
19	20-07-2015	Further Development , & DWH to Data Mining	1	DM1		
20	21-07-2015	**UNIT-II:** Data Pre-processing Techniques	2	DM1		
21	22-07-2015	Data Cleaning, As a process	2	DM2		
22	23-07-2015	**Tutotial-3**	2	DM2		
23	29-07-2015	Data Integration & Transformation , Data Discretization	2	DM1		
24	30-07-2015	Concept Hierarchy Generation, **Tutotial-4**	2	DM2		
25	01-08-2015	Data Mining Introduction, KDD, Architecture	2	DM6		
26	03-08-2015	Data Mining Primitives	2	DM1		
27	04-08-2015	DMQL, Data Generalization	2	DM1		
28	05-08-2015	Data Characterization	2	DM1		
29	06-08-2015	**Tutotial-5**	2	DM2		
30	10-08-2015	Data Comparison	2	DM1		
31	11-08-2015	Descriptive Statistical Measures	2	DM1		
32	12-08-2015	Descriptive Statistical Measures	2	DM1		
33	13-08-2015	**Tutotial-6**	2	DM2		
34	17-08-2015					
35	18-08-2015					
36	19-08-2015	I MID EXAMINATIONS				
37	20-08-2015					
38	22-08-2015					
39	24-08-2015	**UNIT-III:** Association Rule Mining	4	DM1		
40	25-08-2015	Association Rule Mining	4	DM1		

41	26-08-2015	Single-Dimension Boolean Association Rules from Transactional Data bases	4	DM6		
42	27-08-2015	**Tutotial-7**	4	DM2		
43	29-08-2015	Single-Dimension Boolean Association Rules from Transactional Data bases	4	DM1		
44	31-08-2015	Multi-Level Association Rules from Transaction Databases	4	DM1		
45	01-09-2015	Multi-Level Association Rules from Transaction Databases	4	DM1		
46	02-09-2015	Multi-Level Association Rules from Transaction Databases	4	DM6		
47	03-09-2015	**Tutotial-8**	4	DM2		
48	05-09-2015	**UNIT- IV:** Classification and Prediction	4	DM2		
49	07-09-2015	Classification Issues	4	DM6		
50	08-09-2015	Decision Tree Induction	4	DM6		
51	09-09-2015	Bayesian Classification	4	DM1		
52	10-09-2015	**Tutotial-9**	4	DM2		
53	12-09-2015	Association Rule Based	4	DM6		
54	14-09-2015	Other Classification Methods,	4	DM2		
55	15-09-2015	Prediction	4	DM6		
56	16-09-2015	Classifier Accuracy	4	DM1		
57	19-09-2015	Cluster Analysis	4	DM6		
58	21-09-2015	Types of data	4	DM6		
59	22-09-2015	Categorisation of Methods	4	DM2		
60	23-09-2015	Partitioning Methods	4	DM6		
61	24-09-2015	**Tutotial-10**	4	DM2		
62	28-09-2015	Outlier Analysis	4	DM6		
63	29-09-2015	Outlier Analysis	4	DM6		

64	30-09-2015	**UNIT- V:** Multidimensional Analysis	5	DM6		
65	01-10-2015	**Tutorial-11**	5	DM2		
66	03-10-2015	Descriptive Mining of complex Data Objects	5	DM6		
67	05-10-2015	Multimedia Databases	5	DM6		
68	06-10-2015	Time Series Data	5	DM6		
69	07-10-2015	Sequence Data	5	DM1		
70	08-10-2015	**Tutorial -12**	5	DM2		
71	10-10-2015	Text Databases	5	DM1		
72	12-10-2015	World wide web	5	DM1		
73	13-10-2015	Applications	5	DM1		
74	14-10-2015	Trends in Data Mining	5	DM1		
75	15-10-2015	**Tutorial-13**	5	DM2		
76	17-10-2015	Trends in Data Mining	5	DM1		
77	26-10-2015	Practical Applications	5	DM5		
78	27-10-2015	New Trends	5	DM6		
79	28-10-2015	Applications of Data Mining	5	DM1		
80	29-10-2015	**Tutorial-14**	5	DM2		
81	31-10-2015	Revision & Papers review	5	DM1		
82	02-11-2015					
83	03-11-2015					
84	04-11-2015	**II MID EXAMINATIONS**				
85	05-11-2015					
86	07-11-2015					

Note: DELIVERY METHODS **(DM):**

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

DM6: Presentations/PPT

At the End of the course, students attain the

Course Outcomes:CO1,CO2,CO3, CO4,CO5 & sample proofs are enclosed at the end of the Course file(After Completion of the Course)

Course Delivery:

UNIT	1			2				3		4				5		
WEEK	1	3	4	5	6	7	8	10	11	12	13	14	15	16	17	19

	Prepared by	Approved by
Signature		
Name	A.Raja Gopal	HOD/CSE
Designation	Asst.Professor/CSE	Dr.N.Ravi Sankar
Date	20.06.2015	

T152 – DATA MINING AND DATA WAREHOUSING

Lecture	: 4 Periods/week	**Internal Marks**	: 25
Tutorial	: 1	**External Marks**	: 75
Credits	: 4	**External Examination**	: 3 Hrs

UNIT - I

Introduction, Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture, Implementation, Further Development, Data Warehousing to Data Mining

UNIT - II

Why Preprocessing, Cleaning, Integration, Transformation, Reduction, Discretization, Concept Hierarchy Generation, Data Mining Primitives, Query Language, Graphical User Interfaces, Architectures, Concept Description, Data Generalization, Characterizations, Class Comparisons, Descriptive Statistical Measures

UNIT - III

Association Rule Mining, Single-Dimensional Boolean Association Rules from Transactional Databases, Multi-Level Association Rules from Transaction Databases

UNIT - IV

Classification and Prediction, Issues, Decision Tree Induction, Bayesian Classification, Association Rule Based, Other Classification Methods, Prediction, Classifier Accuracy, Cluster Analysis, Types of data, Categorisation of methods, Partitioning methods, Outlier Analysis.

UNIT - V

Multidimensional Analysis and Descriptive Mining of Complex Data Objects, Spatial Databases, Multimedia Databases, Time Series and Sequence Data, Text Databases, World Wide Web, Applications and Trends in Data Mining

TEXTBOOK

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

<u>REFERENCES</u>

1. SamAnahory,DennisMurry, "DataWarehousing in the real world", Pearson Education 2003.
2. DavidHand,HeikkiManila,PadhraicSymth,"Principles of Data Mining", PHI 2004.
3. W.H.Inmon,"Building the Data Warehouse", 3rd Edition, Wiley, 2003.
4. Paulraj Ponniah, "Data Warehousing Fundamentals", Wiley-Interscience Publication, 2003.

DATAMINING AND DATA WAREHOUSING

Course Educational Objectives and Outcomes (CEOs & Cos)

Course Educational objectives (CEOs):

28. Define a Data warehouse and Data Mining system
29. Understand the basic concepts of data mining
30. Interpret the contribution of data warehousing and data mining to the decision support level of the organizations.
31. Evaluate different models used for OLAP and data pre-processing
32. Introduce the concept of data mining with in detail coverage of basic tasks, metrics, issues, and implication.
33. Core topics like classification, clustering and association rules are exhaustively dealt with.
34. To introduce the concept of data warehousing with special emphasis on architecture and design.
35. Categorise and carefully differentiate between different data mining frequent pattern, Association, correlation, Classification, prediction, and cluster analysis.
36. Design and implement systems for data mining.
37. Evaluate the performance of different data mining algorithms
38. Propose data mining solutions for different applications

Course Outcomes(Cos):

By the completion of the course, the students should be able to:

6. Understand the concept of Data Mining, Data Warehouse.
7. Apply data pre-processing techniques and generalization techniques.
8. Ability to identify Associations in large databases using different techniques.
9. Understand various classification and clustering techniques for large databases
10. Apply data mining techniques to complex data objects.

LESON PLAN

S.No.	Date (Tentative)	Topics to be covered	Unit No.	Teaching Method/ Aid	Actual Date	R *Remarks/ Sign*
1	22-06-2015	**UNIT-I :** Syllabus overview - Introduction	1	DM6		
2	23-06-2015	Introduction-Data, Info. Importance of DMDW	1	DM1		
3	24-06-2015	Data warehouse briefing	1	DM6		
4	25-06-2015	Data warehouse Need	1	DM1		
5	26-06-2015	OLTP vs OLAP	1	DM1		
6	**29-06-2015**					
7	**30-06-2015**					
8	**01-07-2015**					
9	**02-07-2015**	*Campus Recruitment Training(CRT)*				
10	**03-07-2015**	*Classes*				
11	**04-07-2015**					
12	**07-07-2015**					
13	08-07-2015	Data Cubes, Lattice of Cuboid,	1	DM2		
14	09-07-2015	**Tutotial-1** Schemas Types	1	DM2		
15	10-07-2015	Schemas, Measures				
16	11-07-2015	Concept Hierarchy, OLAP Operations	1	DM2		
17	14-07-2015	DWH Architecture	1	DM6		
18	15-07-2015	Types of OLAP servers, Meta Data Repository	1	DM1		

19	16-07-2015	DWH Implementation, Further Development , & DWH to Data Mining	1	DM2		
20	17-07-2015	**Tutotial-2**	1	DM2		
21	21-07-2015	**UNIT-II:** Data Pre-processing Techniques	2	DM1		
22	22-07-2015	Data Cleaning, As a process	2	DM2		
23	23-07-2015	Data Integration Transformation, Reduction	2	DM2		
24	24-07-2015	**Tutotial-3**	2	DM2		
25	29-07-2015	Data Discretization & Concept Hierarchy Generation	2	DM1		
26	30-07-2015	Data Mining Introduction, KDD, Architecture	2	DM2		
27	31-07-2015	**Tutotial-4**	2	DM2		
28	01-08-2015	Data Mining Primitives, DMQL	2	DM6		
29	04-08-2015	Data Generalization, Concept Description	2	DM1		
30	05-08-2015	Data Characterization(AOI)	2	DM1		
31	06-08-2015	Data Comparison	2	DM2		
32	07-08-2015	**Tutotial-5**	2	DM2		
33	11-08-2015	Descriptive Statistical Measures	2	DM1		
34	12-08-2015	Descriptive Statistical Measures	2	DM1		
35	13-08-2015	Review	2	DM2		
36	14-08-2015	**Tutotial-6**	2	DM2		
37	18-08-2015					
38	19-08-2015					
39	20-08-2015	**I MID EXAMINATIONS**				
40	21-08-2015					
41	22-08-2015					
42	25-08-2015	**UNIT-III:** Association Rule Mining	4	DM1		

43	26-08-2015	Association Rule Mining	4	DM1		
44	27-08-2015	Single-Dimension Boolean Association Rules from Transactional Data bases	4	DM6		
45	28-08-2015	**Tutotial-7**	4	DM2		
46	29-08-2015	Single-Dimension Boolean Association Rules from Transactional Data bases	4	DM1		
47	01-09-2015	Multi-Level Association Rules from Transaction Databases	4	DM1		
48	02-09-2015	Multi-Level Association Rules from Transaction Databases	4	DM1		
49	03-09-2015	Multi-Level Association Rules from Transaction Databases	4	DM6		
50	04-09-2015	**Tutotial-8**	4	DM2		
51	05-09-2015	**UNIT- IV:** Classification and Prediction	4	DM2		
52	08-09-2015	Classification Issues	4	DM6		
53	09-09-2015	Decision Tree Induction	4	DM6		
54	10-09-2015	Bayesian Classification	4	DM1		
55	11-09-2015	**Tutotial-9**	4	DM2		
56	12-09-2015	Association Rule Based, Other Classification Methods	4	DM6		
57	15-09-2015	Prediction	4	DM6		
58	16-09-2015	Classifier Accuracy	4	DM1		
59	19-09-2015	Cluster Analysis, Types of data	4	DM6		
60	22-09-2015	Categorisation of Methods	4	DM2		
61	23-09-2015	Partitioning Methods	4	DM6		
62	24-09-2015	**Tutotial-10**	4	DM2		
63	29-09-2015	Outlier Analysis	4	DM6		
64	30-09-2015	**UNIT- V:** Multidimensional Analysis	5	DM6		

65	01-10-2015	**Tutorial-11**	5	DM2		
66	03-10-2015	Descriptive Mining of complex Data Objects	5	DM6		
67	06-10-2015	Multimedia Databases ,Time Series Data	5	DM6		
68	07-10-2015	Sequence Data	5	DM1		
69	08-10-2015	**Tutorial -12**	5	DM2		
70	10-10-2015	Text Databases, World wide web	5	DM1		
71	13-10-2015	Applications	5	DM1		
72	14-10-2015	Trends in Data Mining	5	DM1		
73	15-10-2015	**Tutorial-13**	5	DM2		
74	17-10-2015	Trends in Data Mining	5	DM1		
75	27-10-2015	Practical Applications , New Trends	5	DM6		
76	28-10-2015	Applications of Data Mining	5	DM1		
77	29-10-2015	**Tutorial-14**	5	DM2		
78	31-10-2015	Revision & Papers review	5	DM1		
79	03-11-2015					
80	04-11-2015	**II MID EXAMINATIONS**				
81	05-11-2015					
82	06-11-2015					
83	07-11-2015					

Note: **DELIVERY METHODS(DM):**

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

At the End of the course, students attain the

Course Outcomes:CO1,CO2,CO3, CO4,CO5 & sample proofs are enclosed at the end of the Course file(After Completion of the Course)

Course Delivery:

UNIT	1			2				3			4				5		
WEEK	1	3	4	5	6	7	8	10	11	12	13	14	15	16	17	19

	Prepared by	Approved by
Signature		
Name	A.Raja Gopal	HOD/CSE
Designation	Asst.Professor/CSE	Dr.N.Ravi Sankar
Date	20.06.2015	

No	Tentative Date	Topics to be covered	No of classes	Content Delivery Method	Actual Date	Remarks/ sign
Unit-I						
1	22-06-2015	Introduction To Information Security	1	DM1		
2	23-06-2015	OSI Security Architecture	1	DM1		
3	25-06-2015	Security Attacks	1	DM1		
4	26-06-2015	Security Services	1	DM1		
5	27-06-2015	Security Mechanisms	1	DM1		
6	29-06-2015	Model For N/W Security	1	DM1		
7	30-06-2015	Internet Standards and RFC	1	DM1		
8	02-07-2015	Conventional Encryption Principles	1	DM1		
9	03-07-2015	Tutorial	1	DM2		
10	04-07-2015	Convention Encryption Algorithms:DES	1	DM1		
11	06-07-2015	Double DES Triple DES	1	DM1		
12	07-07-2015	Cipher block modes of Operations ECB,CBC	1	DM1		
13	09-07-2015	CFB,OFB and CTR	1	M1		
14	10-07-2015	Tutorial	1	DM2		
15	13-07-2003	Location Of Encryption Devices	1	DM1		
16	14-07-2015	Key Distribution	1	DM1		
17	16-07-2015	Approaches Of Message Authentication & Hash functions	1	DM1		
18	17-07-2015	Tutorial	1	DM2		
19	20-07-2015	SHA-512	1	DM6		
20	21-07-2015	HMAC	1	DM6		
UNIT-II						
21	23-07-2015	Public Key Cryptographic Principles	1	DM1		
22	24-07-2015	Tutorial	1	DM2		
23	25-07-2015	Fermat's theorem and euler's theorem	1	DM3		

24	27-07-2015	Discrete logarithms and primitive roots	1	DM3		
25	28-07-2015	Diffie-Hellman Key exchange	1	DM1		
26	30-07-2015	Digital Signatures, Digital certificates	1	DM1		
27	31-07-2015	Tutorial	1	DM2		
28	01-08-2015	Certificate Authority	1	DM1		
29	03-08-2015	Key Management	1	DM1		
30	04-08-2015	Kerberoes-version4	1	DM6		
31	06-08-2015	Kerberoes-version5	1	DM6		
32	07-08-2015	Tutorial	1	DM2		
33	10-08-2015	X.509version2	1	DM6		
34	11-08-2015	X.509version3	1	DM6		
35	13-08-2015	Directory Authentication Process	1	DM1		
36	14-08-2015	Tutorial	1	DM2		
UNIT-III						
37	24-08-2015	Email Privacy	1	DM1		
38	25-08-2015	Pretty Good Privacy	1	DM6		
39	27-08-2015	General format of PGP message	1	DM6		
40	28-08-2015	Tutorial	1	DM2		
41	29-08-2015	PGP Services	1	DM1		
42	31-08-2015	MIME	1	DM6		
43	01-09-2015	S/MIME	1	DM6		
44	03-09-2015	S/MIME Certificate Processing	1	DM6		
45	04-09-2015	Tutorial	1	DM1		
46	05-09-2015	IP Security Overview	1	DM6		
47	07-09-2015	IP Authentication Architecture	1	DM6		
48	08-09-2015	Authentication Header	1	DM6		
49	10-09-2015	Encapsulating Security Payload	1	DM1		
50	11-09-2015	Tutorial	1	DM2		

51	14-09-2015	Combining Security Associations	1	DM1		
		UNIT-IV				
52	15-09-2015	Introduction to Web Security	1	DM1		
53	18-09-2015	Tutorial	1	DM1		
54	19-09-2015	Web Security Requirements	1	DM1		
55	21-09-2015	SSL	1	DM1		
56	22-09-2015	SSL	1	DM1		
57	25-09-2015	Tutorial	1	DM1		
58	26-09-2015	SSL	1	DM1		
59	28-09-2015	TLS	1	DM1		
60	29-09-2015	TLS	1	DM1		
61	01-10-2015	Dual Signature	1	DM1		
62	03-10-2015	SET	1	DM6		
63	05-10-2015	SET	1	DM6		
		UNIT-V				
64	06-10-2015	Intruders	1	DM1		
65	08-10-2015	Intrusion Detection Systems	1	DM1		
66	09-10-2015	Tutorial	1	DM2		
67	12-10-2015	Intrusion Prevention Systems	1	DM1		
68	13-10-2015	Viruses Tutorial	1	DM1		
69	15-10-2015	Related Threats and worms	1	DM1		
70	16-10-2015	Tutorial	1	DM2		
71	17-10-2015	Firewall Design Principles	1	DM1		
72	26-10-2015	Trusted Systems	1	DM1		
73	27-10-2015	Review of Model papers	1	DM1		
74	29-10-2015	Tutorial/ Review of Model papers	1	DM2		
75	30-10-2015	Tutorial	1	DM2		
76	31-10-2015	Review of Model papers	1	DM2		

Total	
Total number of classes required to complete the syllabus	
Total number of classes available as per Schedule	

NOTE: DELIVERY METHODS :**DM1**: Lecture interspersed with discussions/DM 1, **DM2:** Tutorial, **DM3:** Lecture with a quiz, **DM4**: Assignment/Test, **DM5**: Demonstration (laboratory, field visit), **DM6:** Presentations/PPT

At the End of the course, students attained the **Course Outcomes:CO1,CO2,CO3,CO4,CO5**& sample proofs are enclosed in Course file.

	Name of the Instructor	Name of Course Coordinator	Name of the Module Coordinator	HOD
Signature	**L V Krishna Rao**	**Mr D. Veeraiah**	**Dr. N. Ravi shankar**	

Total						
Total number of classes required to complete the syllabus	Tentative Date	Topics to be covered	No of classes	Content Delivery Method	Actual Date	
Total number of classes available as per Schedule						
Unit-I						
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4	26-06-2015	Security Services	1	DM1		
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6	29-06-2015	Model For N/W Security	1	DM1		
7	30-06-2015	Internet Standards and RFC	1	DM1		
8	02-07-2015	Conventional Encryption Principles	1	DM1		
9	03-07-2015	Convention Encryption Algorithms:DES	1	DM2		
10	04-07-2015	Tutorial	1	DM1		
11	06-07-2015	Double DES Triple DES	1	DM1		
12	07-07-2015	Cipher block modes of Operations ECB,CBC	1	DM1		
13	09-07-2015	CFB,OFB	1	M1		
14	10-07-2015	CTR	1	DM2		
15	13-07-2003	Location Of Encryption Devices	1	DM1		
16	14-07-2015	Key Distribution	1	DM1		
17	16-07-2015	Approaches Of Message Authentication & Hash functions	1	DM1		
18	17-07-2015	SHA versions	1	DM2		
19	20-07-2015	SHA-512	1	DM6		
20	21-07-2015	HMAC	1	DM6		
UNIT-II						
21	23-07-2015	Public Key Cryptographic Principles	1	DM1		

No	Tentative Date	Topics to be covered	Actual Date	No of classes	Content Delivery Method	
22	24-07-2015	Fermat's theorem and euler's theorem	1	DM3		
23	25-07-2015	Tutorial	1	DM2		
24	27-07-2015	Discrete logarithms and primitive roots	1	DM3		
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29	03-08-2015	Key Management	1	DM1		
30	04-08-2015	Kerberoes-version4	1	DM6		
31	06-08-2015	Kerberoes-version5	1	DM6		
32	07-08-2015	Tutorial	1	DM2		
33	10-08-2015	X.509version2	1	DM6		
34	11-08-2015	X.509version3	1	DM6		
35	13-08-2015	Directory Authentication Process	1	DM1		
36	14-08-2015	Review of Unit-3	1	DM2		
No	Tentative Date	Topics to be covered	Actual Date	No of classes	Content Delivery Method	
UNIT-III						
37	24-08-2015	Email Privacy	1	DM1		
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46	05-09-2015	Tutorial	1	DM2		
47	07-09-2015	IP Authentication Architecture	1	DM6		
48	08-09-2015	Authentication Header	1	DM6		
49	10-09-2015	Encapsulating Security Payload	1	DM1		
50	11-09-2015	Test on unit-III	1	DM3		
51	14-09-2015	Combining Security Associations	1	DM1		
UNIT-IV						
52	15-09-2015	Introduction to Web Security	1	DM1		
53	18-09-2015	Tutorial	1	DM1		
54	19-09-2015	Web Security Requirements	1	DM6		
55	21-09-2015	SSL	1	DM6		
56	22-09-2015	SSL	1	DM6		
57	25-09-2015	SSL	1	DM6		
58	26-09-2015	Tutorial	1	DM2		
59	28-09-2015	TLS	1	DM6		
60	29-09-2015	TLS	1	DM6		
61	01-10-2015	Dual Signature	1	DM1		
62	03-10-2015	SET	1	DM6		
63	05-10-2015	SET	1	DM6		
UNIT-V						
64	06-10-2015	Intruders	1	DM1		
65	08-10-2015	Intrusion Detection Systems	1	DM1		
66	09-10-2015	Tutorial	1	DM2		
67	12-10-2015	Intrusion Prevention Systems	1	DM1		
68	13-10-2015	Viruses Tutorial	1	DM1		
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75	30-10-2015	Tutorial	1	DM2		
76	31-10-2015	Review of Model papers	1	DM2		

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	Name of the Instructor	Name of Course Coordinator	Name of the Module Coordinator	HOD
Signature	L V Krishna Rao	Mr D. Veeraiah	Dr. N. Ravi shankar	

LESSON PLAN

Sub Code & Sub Name: T258 & Mobile Communications

Branch: CSE-Bsec   **Year:IV. B.Tech**   **Semester : VII**

Date: 22-06-15

EWD:31-10-15

SUBJECT / PAPER PATTERN:

Subject Code	Subject / Paper	Scheme of Instruction			Scheme of Examination		Total	Credits
		Periods per Week			Maximum Marks			
		Lectures	Tutorial	Lab	Internal	External		
T258	Mobile Communications	4	1	--	25	75	100	4
P859	Mobile Communications Lab	--	--	3	25	75	100	2

DISTRIBUTION AND WEIGHTAGE OF MARKS:

1) The performance of a student in each semester shall be evaluated subject wise with a maximum of **100** marks for **theory** and **100** marks for **practical** subject.

2) For each subject the marks distribution and evaluation shall be as follows

	THEORY	PRACTICALS
INTERNAL(Sessional)	25 (20 = Subject + 5 = Attendance)	25 (10 = Day to Day Work + 10 = Internal Test + 5 = Attendance)
EXTERNAL(End Semester)	75	75
TOTAL	100	100

The question paper for internal examinations shall contain 5 questions, Out of five questions given, student has to answer all questions.

3) For each theory subject, during each semester there shall be 2 tests, for a duration of 90 minutes.

    a) One descriptive test to be conducted in 1 – 2 units and

    b) Second descriptive test be conducted in 3 – 5 units thereby.

4) However,75% weightage for the **best** and 25% for the other test shall be considered for awarding sessional marks

5) The question paper for External (End Semester) examinations shall contain 5 questions (one question from each unit with internal choice) and each question carries 12 Marks, total 75 Marks(i.e., 5x12=60)

T258 – MOBILE COMMUNICATIONS

Lecture	: 4 Periods/week	**Internal Marks**	: 25
Tutorial	: 1	**External Marks**	: 75
Credits	: 4	**External Examination**	: 3 Hrs.

UNIT - I

The Cellular Concept: Cellular Architecture, The First Generation Cellular Systems, Second Generation Cellular Systems, Third Generation Cellular Systems, Wireless Local Loop, IEEE 802.16

UNIT - II

Ad Hoc Wireless Networks: Introduction, Issues in Ad Hoc Wireless networks. **Medium Access Control:** Issues in MAC, Design Goals of MAC, Classification of MAC protocols. **Contention Based MAC Protocols:** MACAW, Floor Acquisition Multiple Access Protocol, Busy Tone Multiple Access protocols. **Reservation Mechanisms:** D-PRMA, CATA. Scheduling Mechanisms: DPS

UNIT - III

Routing in Ad hoc Wireless networks: Issues in Routing, Classification of Routing Protocols. **Table Driven:** DSDV, WRP, STAR. On Demand: AODV, DSR, LAR. **Hybrid Routing**: ZRP, CEDAR. **Hierarchical Routing:** HSR, FSR.

UNIT - IV

Hybrid Wireless Networks: Introduction. **Next Generation Hybrid Network Architectures:** MCN, HWN, iCAR, SOPRANO, TWILL, A-GSM, UCAN, Open Issues in Next Generation Hybrid Architectures, Pricing in Hybrid Wireless Networks.

UNIT - V

Recent Advances: Ultra Wide Band Radio Communication (UWB), Wireless Fidelity Systems, Optical Wireless Networks, Multimode 802.11.

TEXT BOOK

C. Siva Ram Murthy, B.S. Manoj, " Ad Hoc Wireless Networks: Architectures and Protocols", Pearson Education, 2004

REFERENCES

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

2. Garg, "Wireless Networks Evolution: 2G to 3G", Pearson Education, 2002

3. Rappaport, " Wireless Communications: Principles and Practice" Second Edition, Pearson Education, 2009

Course Description:

The course provides an overview of the latest developments and trends in wireless mobile communications, and addresses the impact of wireless transmission and user mobility on the design and management of wireless mobile systems, network architectures: cellular networks, ad hoc networks; access protocols; radio and network resource management; quality of service; mobility and location management; routing; mobile-IP; current wireless technologies for personal, local and satellite networks.

Course Objectives:

- To study the technical issues and state-of-the-art techniques in the operation and management of mobile communications networks;
- To learn the engineering principles and system evaluation methods used in the design of mobile communications networks.
- To understand the issues involved in mobile communication system design and analysis.
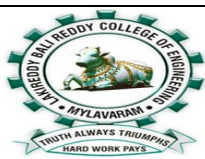- To give the student an understanding of digital cellular systems (GSM, CDMA)

Course Outlines:

- ✓ Overview of wireless communications
- ✓ Cellular wireless networks
- ✓ Hybrid wireless networks
- ✓ Next generation Hybrid network architecture
- ✓ Medium access control
- ✓ Recent advances

Student Learning Outcomes:

- ✓ By the end of the course, the student will be able to analyze and design wireless and mobile cellular systems.
- ✓ The student will be able to understand impairments due to multipath fading channel and be able simulate standard stochastic channel models for various environments.
- ✓ The student will be able understand the fundamental techniques to overcome the different fading effects.

- ✓ The student will have detailed understanding of current and proposed cellular technologies.
- ✓ The student will have the ability to work in advanced research wireless and mobile cellular technologies.

LESSON PLAN

Sub Code & Sub Name: T258 & Mobile Communications		**Date: 22-06-15**
Branch: CSE-Asec **Year:.B.Tech** **Semester :VII**		**EWD: 31-10-15**

Unit wise syllabus:

Unit: 1:

The Cellular Concept: Cellular Architecture, The First Generation Cellular Systems, Second Generation Cellular Systems, Third Generation Cellular Systems, Wireless Local Loop, IEEE 802.16

Objective:

This unit gives an overview of Cellular Architecture, Generations of Cellular Systems, Wireless Local Loop, IEEE 802.16.

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	**Introduction** The Cellular Concept	2	22.06.2015 23.06.2015		**DM1**
2	Cellular Architecture	1	24.06.2015		**DM1**
3	TUTORIAL HOUR	1	25.06.2015		
4	The First Generation Cellular Systems	2	25.06.2015		**DM1**
5	Second Generation Cellular Systems,	2	27.06.2015 29.06.2015		**DM1**
6	Third Generation Cellular Systems	1	30.06.2015		**DM1**
	TUTORIAL HOUR	1	1.07.2015		
7	Wireless Local Loop	2	2.07.2015 4.07.2015		**DM1**
8	IEEE 802.16	2	11.07.2015		**DM1**

			13.07.2015		

Unit: II:	**Ad Hoc Wireless Networks:** Introduction, Issues in Ad Hoc Wireless networks. **Medium Access Control:** Issues in MAC, Design Goals of MAC, Classification of MAC protocols. **Contention Based MAC Protocols:** MACAW, Floor Acquisition Multiple Access Protocol, Busy Tone Multiple Access protocols. **Reservation Mechanisms:** D-PRMA, CATA. Scheduling Mechanisms: DPS **Objective:** This unit gives an in-depth overview of Issues in Ad Hoc Wireless networks, Medium Access Control, Contention Based MAC Protocols, Reservation Mechanisms.

SNo	Topics to be covered	No. of Classes	Tentative Date	Actual Date	Teaching Method
1	Introduction	**1**	14.07.2015		**DM1**
2	Issues in Ad Hoc Wireless networks	**1**	15.07.2015		**DM1**
3	**Medium Access Control:** Issues in MAC	2	16.07.2015 17.07.2015		**DM1**
4	TUTORIAL HOUR	1	20.07.2015		**DM1**
5	Design Goals of MAC	1	21.07.2015		**DM1**
6	Classification of MAC protocols	2	22.07.2015 23.07.2015		**DM1**
7	**Contention Based MAC Protocols:** MACAW	1	25.07.2015		**DM2**
8	TUTORIAL HOUR	1	27.07.2015		**DM1**
9	Floor Acquisition Multiple Access Protocol	2	28.07.2015 29.07.2015		**DM1**
10	Busy Tone Multiple Access protocols	2	30.07.2015 1.08.2015		**DM2**
11	TUTORIAL HOUR	1	3.08.2015		**DM1**
12	**Reservation Mechanisms:** D-PRMA,	1	4.08.2015		**DM1**
13	CATA	1	5.08.2015		**DM2**
14	Scheduling Mechanisms: DPS	1	6.08.2015		**DM1**

15	TUTORIAL HOUR	1	10.08.2015		**DM1**

Unit: III	**Routing in Ad hoc Wireless networks:** Issues in Routing, Classification of Routing Protocols. **Table Driven:** DSDV, WRP, STAR. On Demand: AODV, DSR, LAR. **Hybrid Routing**: ZRP, CEDAR. **Hierarchical Routing:** HSR, FSR. **Objective:** The main objective of this unit is to impart a thorough knowledge of Classification of Routing Protocols, Table Driven, Hybrid Routing, Hierarchical Routing

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	Issues in Routing	1	11.08.2015		**DM1**
2	Classification of Routing Protocols	2	12.08.2015 13.08.2015		**DM1**
3	**Table Driven:** DSDV	1	24.08.2015		**DM1**
4	WRP	2	25.08.2015 25.08.2015		**DM2**
	TUTORIAL HOUR	1	26.08.2015		
5	STAR-protocol	1	27.08.2015		**DM1**
6	On Demand: AODV	1	29.08.2015		**DM1**
7	DSR	1	31.08.2015		**DM1**
8	TUTORIAL HOUR	1	1.09.2015		**DM1**
9	LAR protocol	1	2.09.2015		**DM3**

UNIT-IV	**Hybrid Wireless Networks:** Introduction. **Next Generation Hybrid Network Architectures:** MCN, HWN, iCAR, SOPRANO, TWILL, A-GSM, UCAN, Open Issues in Next Generation Hybrid Architectures, Pricing in Hybrid Wireless Networks. **Objective:** This unit deals Next Generation Hybrid Network Architectures, Open Issues in Next Generation Hybrid Architectures, Pricing in Hybrid Wireless Networks.

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	**Hybrid Wireless Networks:** Introduction	1	3.09.2015		**DM1**

2	**Next Generation Hybrid Network Architectures:** MCN	1	7.09.2015		**DM1**
3	HWN	1	8.09.2015		**DM1**
	TUTORIAL HOUR	1	9.09.2015		
4	iCAR	2	10.09.2015 12.09.2015		**DM2**
5	SOPRANO,	2	14.09.2015 15.09.2015		**DM1**
6	TWILL	1	16.09.2015		**DM1**
7	A-GSM	2	19.09.2015 21.09.2015		**DM2**
8	TUTORIAL HOUR	1	22.09.2015		**DM1**
9	UCAN	1	23.09.2015		**DM1**
10	Open Issues in Next Generation Hybrid	1	26.09.2015		**DM2**
11	Pricing in Hybrid Wireless Networks.	1	28.09.2015		**DM1**

UNIT-V	**Recent Advances:** Ultra Wide Band Radio Communication (UWB), Wireless Fidelity Systems, Optical Wireless Networks, Multimode 802.11. **Objective:** This unit deals with the **Recent Advances:** Wireless Fidelity Systems, Optical Wireless Networks, and Multimode 802.11.

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	**Recent Advances** Introduction	1	29.09.2015		**DM1**
2	TUTORIAL HOUR	1	30.09.2015		
3	Ultra Wide Band Radio Communication (UWB)	3	28.09.2015 1.10.2015 5.10.2015		**DM1**

4	Wireless Fidelity Systems: Introduction	1	6.10.2015		**DM2**
5	Fidelity Systems	3	7.10.2015 9.10.2015 10.10.2015		**DM1**
6	TUTORIAL HOUR	1	12.10.2015		
7	Optical Wireless Networks	3	13.10.2015 14.10.2015 15.10.2015		**DM1**
8	TUTORIAL HOUR	1	19.10.2015		
9	Multimode 802.11.(PART-1)	3	21.10.2015 26.10.2015 27.10.2015		**DM2**
10	TUTORIAL HOUR	1	28.10.2015		
11	Multimode 802.11.(PART-2)	2	29.10.2015 31.10.2015		**DM1**
II – MID Examinations					
Total Classes					
Total number of classes required to complete the syllabus					
Total number of classes available as per Schedule					

NOTE: DELIVERY METHODS: **2015**: Lecture interspersed with discussions/DM1, **DM2:** Tutorial, **DM3:** Lecture with a quiz, **DM4**: Assignment/Test, **DM5**: Demonstration (laboratory, field visit), **DM6:** Presentations/PPT

At the End of the course, students attained the **Course Outcomes: CO1, CO2, CO3, CO4, CO5** & sample proofs are enclosed in Course file.

Course Delivery Plan:

Units	1					2			3		4		5	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14

	Prepared by	Approved by
Signature		
Name	**G.BALU NARASIMHARAO**	**HOD/CSE**
Designation	**Assistant Professor/CSE**	**Professor**
Date	**15/6/2015**	

Unit-Wise Question Bank

UNIT-I

1. Explain Cellular architecture?
2. Explain Second-generation cellular systems?
3. Briefly explain about Handoffs?
4. Explain about Wireless Local Loop?
5. Explain the concept of Capacity Enhancement?

UNIT-II

1. What is AdHoc Wireless networks and explain their applications?
2. Differences between cellular network and AdHoc Wireless networks?
3. Briefly explain Classification of MAC protocols?
4. Explain Busy Tone Multiple Access (BTMA) protocol?
5. Explain the Scheduling Mechanism of DPS?
6. Explain D-PRMA protocol?

UNIT-III

1. What are the issues in designing a routing protocol for AdHoc wireless networks?
2. Explain about Destination Sequenced Distance-Vector Routing protocol?
3. Explain Dynamic Source Routing (DSR) protocol?
4. Explain Fisheye State Routing (FSR) protocol?
5. Explain Classification of Routing protocols?
6. Explain ZRP Hybrid protocol?

UNIT-IV

1. Explain TWILL architecture?
2. What are the open issues in Next Generation Hybrid Architectures?
3. Explain MCN architecture?
4. Explain SOPRANO architecture?
5. Explain iCAR architecture?
6. Explain about pricing in Hybrid wireless Networks?

UNIT-V

1. Explain about UWB (Ultra Wide Band) Radio communication?
2. Explain the concept of optical wireless WDM?
3. Explain about operation of Multimedia 802.11?
4. Explain issues and service provider models of Wi-Fi sy

SUBJECT / PAPER PATTERN:

Subject Code	Subject / Paper	Scheme of Instruction			Scheme of Examination		Total	Credits
		Periods per Week			Maximum Marks			
		Lectures	Tutorial	Lab	Internal	External		
T258	Mobile Communications	4	1	--	25	75	100	4
P859	Mobile Communications Lab	--	--	3	25	75	100	2

DISTRIBUTION AND WEIGHTAGE OF MARKS:

6) The performance of a student in each semester shall be evaluated subject wise with a maximum of **100** marks for **theory** and **100** marks for **practical** subject.

7) For each subject the marks distribution and evaluation shall be as follows

	THEORY	PRACTICALS
INTERNAL(Sessional)	25 (20 = Subject + 5 = Attendance)	25 (10 = Day to Day Work + 10 = Internal Test + 5 = Attendance)
EXTERNAL(End Semester)	75	75
TOTAL	100	100

The question paper for internal examinations shall contain 5 questions, Out of five questions given, student has to answer all questions.

8) For each theory subject, during each semester there shall be 2 tests, for a duration of 90 minutes.

    c) One descriptive test to be conducted in 1 – 2 units and

    d) Second descriptive test be conducted in 3 – 5 units thereby.

9) However,75% weightage for the **best** and 25% for the other test shall be considered for awarding sessional marks

10) The question paper for External (End Semester) examinations shall contain 5 questions (one question from each unit with internal choice) and each question carries 12 Marks, total 75 Marks(i.e., 5x12=60)

T258 – MOBILE COMMUNICATIONS

Lecture	: 4 Periods/week	Internal Marks	: 25
Tutorial	: 1	External Marks	: 75
Credits	: 4	External Examination	: 3 Hrs.

UNIT - I

The Cellular Concept: Cellular Architecture, The First Generation Cellular Systems, Second Generation Cellular Systems, Third Generation Cellular Systems, Wireless Local Loop, IEEE 802.16

UNIT - II

Ad Hoc Wireless Networks: Introduction, Issues in Ad Hoc Wireless networks. **Medium Access Control:** Issues in MAC, Design Goals of MAC, Classification of MAC protocols. **Contention Based MAC Protocols:** MACAW, Floor Acquisition Multiple Access Protocol, Busy Tone Multiple Access protocols. **Reservation Mechanisms:** D-PRMA, CATA. Scheduling Mechanisms: DPS

UNIT - III

Routing in Ad hoc Wireless networks: Issues in Routing, Classification of Routing Protocols. **Table Driven:** DSDV, WRP, STAR. On Demand: AODV, DSR, LAR. **Hybrid Routing**: ZRP, CEDAR. **Hierarchical Routing:** HSR, FSR.

UNIT - IV

Hybrid Wireless Networks: Introduction. **Next Generation Hybrid Network Architectures:** MCN, HWN, iCAR, SOPRANO, TWILL, A-GSM, UCAN, Open Issues in Next Generation Hybrid Architectures, Pricing in Hybrid Wireless Networks.

UNIT - V

Recent Advances: Ultra Wide Band Radio Communication (UWB), Wireless Fidelity Systems, Optical Wireless Networks, Multimode 802.11.

TEXT BOOK

C. Siva Ram Murthy, B.S. Manoj, " Ad Hoc Wireless Networks: Architectures and Protocols", Pearson Education, 2004

REFERENCES

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

2.   Garg, "Wireless Networks Evolution: 2G to 3G", Pearson Education, 2002

3.   Rappaport, " Wireless Communications: Principles and Practice"
        Second Edition, Pearson Education,2009

Course Description:

The course provides an overview of the latest developments and trends in wireless mobile communications, and addresses the impact of wireless transmission and user mobility on the design and management of wireless mobile systems, network architectures: cellular networks, ad hoc networks; access protocols; radio and network resource management; quality of service; mobility and location management; routing; mobile-IP; current wireless technologies for personal, local and satellite networks.
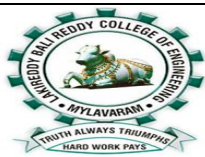
Course Objectives:

- To study the technical issues and state-of-the-art techniques in the operation and management of mobile communications networks;
- To learn the engineering principles and system evaluation methods used in the design of mobile communications networks.
- To understand the issues involved in mobile communication system design and analysis.
- To give the student an understanding of digital cellular systems (GSM, CDMA)

Course Outlines:

- ✓ Overview of wireless communications
- ✓ Cellular wireless networks
- ✓ Hybrid wireless networks
- ✓ Next generation Hybrid network architecture
- ✓ Medium access control
- ✓ Recent advances

Student Learning Outcomes:

- ✓ By the end of the course, the student will be able to analyze and design wireless and mobile cellular systems.
- ✓ The student will be able to understand impairments due to multipath fading channel and be able simulate standard stochastic channel models for various environments.
- ✓ The student will be able understand the fundamental techniques to overcome the different fading effects.
- ✓ The student will have detailed understanding of current and proposed cellular technologies.
- ✓ The student will have the ability to work in advanced research wireless and mobile cellular technologies.

LESSON PLAN

 Sub Code & Sub Name: T258 & Mobile Communications Branch: CSE-Asec Year:.B.Tech Semester : VII	**Date: 22-06-15** **EWD: 31-10-15**

Unit wise syllabus:

Unit: 1:

The Cellular Concept: Cellular Architecture, The First Generation Cellular Systems, Second Generation Cellular Systems, Third Generation Cellular Systems, Wireless Local Loop, IEEE 802.16

Objective:

This unit gives an overview of Cellular Architecture, Generations of Cellular Systems, Wireless Local Loop, IEEE 802.16.

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	**Introduction** The Cellular Concept	2	22.06.2015 23.06.2015		**DM1**
2	Cellular Architecture	1	24.06.2015		**DM1**
3	TUTORIAL HOUR	1	25.06.2015		
4	The First Generation Cellular Systems	2	25.06.2015		**DM1**
5	Second Generation Cellular Systems,	2	27.06.2015 29.06.2015		**DM1**
6	Third Generation Cellular Systems	1	30.06.2015		**DM1**
	TUTORIAL HOUR	1	1.07.2015		
7	Wireless Local Loop	2	2.07.2015 4.07.2015		**DM1**
8	IEEE 802.16	2	11.07.2015		**DM1**

			13.07.2015		
Unit: II:	**Ad Hoc Wireless Networks:** Introduction, Issues in Ad Hoc Wireless networks. **Medium Access Control:** Issues in MAC, Design Goals of MAC, Classification of MAC protocols. **Contention Based MAC Protocols:** MACAW, Floor Acquisition Multiple Access Protocol, Busy Tone Multiple Access protocols. **Reservation Mechanisms:** D-PRMA, CATA. Scheduling Mechanisms: DPS **Objective:** This unit gives an in-depth overview of Issues in Ad Hoc Wireless networks, Medium Access Control, Contention Based MAC Protocols, Reservation Mechanisms.				

SNo	Topics to be covered	No. of Classes	Tentative Date	Actual Date	Teaching Method
1	Introduction	**1**	14.07.2015		**DM1**
2	Issues in Ad Hoc Wireless networks	**1**	15.07.2015		**DM1**
3	**Medium Access Control:** Issues in MAC	2	16.07.2015 17.07.2015		**DM1**
4	TUTORIAL HOUR	1	20.07.2015		**DM1**
5	Design Goals of MAC	1	21.07.2015		**DM1**
6	Classification of MAC protocols	2	22.07.2015 23.07.2015		**DM1**
7	**Contention Based MAC Protocols:** MACAW	1	25.07.2015		**DM2**
8	TUTORIAL HOUR	1	27.07.2015		**DM1**
9	Floor Acquisition Multiple Access Protocol	2	28.07.2015 29.07.2015		**DM1**
10	Busy Tone Multiple Access protocols	2	30.07.2015 1.08.2015		**DM2**
11	TUTORIAL HOUR	1	3.08.2015		**DM1**
12	**Reservation Mechanisms:** D-PRMA,	1	4.08.2015		**DM1**
13	CATA	1	5.08.2015		**DM2**
14	Scheduling Mechanisms: DPS	1	6.08.2015		**DM1**

15	TUTORIAL HOUR	1	10.08.2015		**DM1**

Unit: III	**Routing in Ad hoc Wireless networks:** Issues in Routing, Classification of Routing Protocols. **Table Driven:** DSDV, WRP, STAR. On Demand: AODV, DSR, LAR. **Hybrid Routing**: ZRP, CEDAR. **Hierarchical Routing:** HSR, FSR. **Objective:** The main objective of this unit is to impart a thorough knowledge of Classification of Routing Protocols, Table Driven, Hybrid Routing, Hierarchical Routing

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	Issues in Routing	1	11.08.2015		**DM1**
2	Classification of Routing Protocols	2	12.08.2015 13.08.2015		**DM1**
3	**Table Driven:** DSDV	1	24.08.2015		**DM1**
4	WRP	2	25.08.2015 25.08.2015		**DM2**
	TUTORIAL HOUR	1	26.08.2015		
5	STAR-protocol	1	27.08.2015		**DM1**
6	On Demand: AODV	1	29.08.2015		**DM1**
7	DSR	1	31.08.2015		**DM1**
8	TUTORIAL HOUR	1	1.09.2015		**DM1**
9	LAR protocol	1	2.09.2015		**DM3**

UNIT-IV	**Hybrid Wireless Networks:** Introduction. **Next Generation Hybrid Network Architectures:** MCN, HWN, iCAR, SOPRANO, TWILL, A-GSM, UCAN, Open Issues in Next Generation Hybrid Architectures, Pricing in Hybrid Wireless Networks. **Objective:** This unit deals Next Generation Hybrid Network Architectures, Open Issues in Next Generation Hybrid Architectures, Pricing in Hybrid Wireless Networks.

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	**Hybrid Wireless Networks:** Introduction	1	3.09.2015		**DM1**

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
2	**Next Generation Hybrid Network Architectures:** MCN	1	7.09.2015		**DM1**
3	HWN	1	8.09.2015		**DM1**
	TUTORIAL HOUR	1	9.09.2015		
4	iCAR	2	10.09.2015 12.09.2015		**DM2**
5	SOPRANO,	2	14.09.2015 15.09.2015		**DM1**
6	TWILL	1	16.09.2015		**DM1**
7	A-GSM	2	19.09.2015 21.09.2015		**DM2**
8	TUTORIAL HOUR	1	22.09.2015		**DM1**
9	UCAN	1	23.09.2015		**DM1**
10	Open Issues in Next Generation Hybrid	1	26.09.2015		**DM2**
11	Pricing in Hybrid Wireless Networks.	1	28.09.2015		**DM1**

UNIT-V	**Recent Advances:** Ultra Wide Band Radio Communication (UWB), Wireless Fidelity Systems, Optical Wireless Networks, Multimode 802.11. **Objective:** This unit deals with the **Recent Advances:** Wireless Fidelity Systems, Optical Wireless Networks, and Multimode 802.11.

Session No	Topics to be covered	No. of Classes	Date		Teaching Method
1	**Recent Advances** Introduction	1	29.09.2015		**DM1**
2	TUTORIAL HOUR	1	30.09.2015		
3	Ultra Wide Band Radio Communication (UWB)	3	28.09.2015 1.10.2015 5.10.2015		**DM1**

4	Wireless Fidelity Systems: Introduction	1	6.10.2015		**DM2**
5	Fidelity Systems	3	7.10.2015 9.10.2015 10.10.2015		**DM1**
6	TUTORIAL HOUR	1	12.10.2015		
7	Optical Wireless Networks	3	13.10.2015 14.10.2015 15.10.2015		**DM1**
8	TUTORIAL HOUR	1	19.10.2015		
9	Multimode 802.11.(PART-1)	3	21.10.2015 26.10.2015 27.10.2015		**DM2**
10	TUTORIAL HOUR	1	28.10.2015		
11	Multimode 802.11.(PART-2)	2	29.10.2015 31.10.2015		**DM1**
II – MID Examinations					
Total Classes					
Total number of classes required to complete the syllabus					
Total number of classes available as per Schedule					

NOTE: DELIVERY METHODS: **2015**: Lecture interspersed with discussions/DM1, **DM2:** Tutorial, **DM3:** Lecture with a quiz, **DM4**: Assignment/Test, **DM5**: Demonstration (laboratory, field visit), **DM6:** Presentations/PPT

At the End of the course, students attained the **Course Outcomes: CO1, CO2, CO3, CO4, CO5** & sample proofs are enclosed in Course file.

Course Delivery Plan:

Units	1					2				3	4		5	
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14

	Prepared by	Approved by
Signature		
Name	**G.BALU NARASIMHARAO**	**Dr.N.Ravi Shankar**
Designation	**Assistant Professor/CSE**	**Professor, HOD/CSE**
Date	**22/6/2015**	

Unit-Wise Question Bank

UNIT-I

6. Explain Cellular architecture?
7. Explain Second-generation cellular systems?
8. Briefly explain about Handoffs?
9. Explain about Wireless Local Loop?
10. Explain the concept of Capacity Enhancement?

UNIT-II

7. What is AdHoc Wireless networks and explain their applications?
8. Differences between cellular network and AdHoc Wireless networks?
9. Briefly explain Classification of MAC protocols?
10. Explain Busy Tone Multiple Access (BTMA) protocol?
11. Explain the Scheduling Mechanism of DPS?
12. Explain D-PRMA protocol?

UNIT-III

7. What are the issues in designing a routing protocol for AdHoc wireless networks?
8. Explain about Destination Sequenced Distance-Vector Routing protocol?
9. Explain Dynamic Source Routing (DSR) protocol?
10. Explain Fisheye State Routing (FSR) protocol?
11. Explain Classification of Routing protocols?
12. Explain ZRP Hybrid protocol?

UNIT-IV

7. Explain TWILL architecture?

8. What are the open issues in Next Generation Hybrid Architectures?

9. Explain MCN architecture?

10. Explain SOPRANO architecture?

11. Explain iCAR architecture?

12. Explain about pricing in Hybrid wireless Networks?

UNIT-V

5. Explain about UWB (Ultra Wide Band) Radio communication?

6. Explain the concept of optical wireless WDM?

7. Explain about operation of Multimedia 802.11?

8. Explain issues and service provider models of Wi-Fi systems?

T310 – SOFTWARE PROJECT MANAGEMENT

Lecture	: 4 Periods/week	**Internal Marks**	: 25
Tutorial	:	**External Marks**	: 75
Credits	: 4	**External Examination**	: 3 Hrs

UNIT - I

Conventional Software Management: The waterfall model, conventional software Management performance. **Evolution of Software Economics:** Software Economics, pragmatic software cost estimation. **Improving Software Economics:** Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections. **The old way and the new:** The principles of conventional software Engineering, principles of modern software management, transitioning to an iterative process.

UNIT - II

Life cycle phases: Engineering and production stages, inception, Elaboration, construction, transition phases. **Artifacts of the process:** The artifact sets, Management artifacts, Engineering artifacts, programmatic artifacts. **Model based software architectures:** A Management perspective and technical perspective.

UNIT - III

Work Flows of the process: Software process workflows, Iteration workflows.

Checkpoints of the process: Major mile stones, Minor Milestones, Periodic status assessments.

Iterative Process Planning: Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process, Pragmatic planning. Use of Software (Microsoft Project) to Assist in Project Planning Activities

UNIT - IV

Project Organizations and Responsibilities: Line-of-Business Organizations, Project Organizations, evolution of Organizations. **Process Automation:** AutomationBuilding blocks, The Project Environment. **Project Control and Process instrumentation:** The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation.

UNIT - V

Tailoring the Process: Process discriminants.**Future Software Project Management:** Modern Project Profiles, Next generation Software economics, modern process transitions. **Case Study:** The command Center Processing and Display system - Replacement (CCPDS)

TEXT BOOK

Software Project Management, Walker Royce: Pearson Education, 2009.

Prerequisites: Knowledge on Software engineering concepts & Object Oriented analysis & design.

Objective(s):

1. Define and highlight importance of software project management.

2. To Describe and understand the software project management activities

3. To implement project plans through managing people, communications and change

4. To Select and employ mechanisms for tracking your software projects

5. Control your software projects Development

6. Learn how to apply the techniques and develop the documents related to IT project management.

Course Outline:

1. Pitfalls of conventional software project management.

2. Parameters that affect Software Economics

3. Life cycle phases and Artifacts produced for effective Project Management

4. Software process workflows and milestones for Project Management.

5. Roles and Responsibilities in a Software organization involved in Project Management.

6. Next generation Project Management.

Student Learning Out Come(s):

CO1: To understand the basic concepts and issues of software project management & parameters to be considered to improve the software economics.

CO2: Apply SDLC methodology (4 lifecycle phases) for development & identification of artifacts for lifecycle phases.

CO3: To conduct activities necessary to successfully complete and close the Software projects & identification of checkpoints in development process.

CO4: Apply the metrics for assessing the quality & cost, to know about automation building blocks & Organization structure.

CO5: Understands how different management and development practices affect software and process quality.

Detailed Lesson Plan:

S.NO	DATE	TOPIC TO BE COVERED	Actual Date	No.of HOURS	Content delivery Methods
		UNIT-I			
1	22.06.2015 23.06.2015	**Conventional software management**		1	DM1
2	24.06.2015	The waterfall model		1	DM1
3	25.06.2015	Conventional software management performance		1	DM6
4	25.06.2015	Evolution of software economics, Software economics		1	DM6
5	27.06.2015	Pragmatic software cost estimation		1	DM1

6	29.06.2015	**Improving software economics**: Size		1	DM1
7	30.06.2015	TUTORIAL		1	DM2
8	1.07.2015	Improving software processes & team effectiveness		1	DM6
9	2.07.2015	Improving automation, peer inspections		1	DM1
10	4.07.2015	**The old way and the new way**: principles of conventional software engineering		1	DM6
11	11.07.2015	Principles of modern software management		1	DM1
12	13.07.2015	Transitioning to an iterative process		1	DM1
	UNIT-II				
13	14.07.2015	**Life cycle phases**: engineering and production stages		1	DM6
14	15.07.2015	Inception ,elaboration		1	DM1
15	16.07.2015 / 17.07.2015	construction & Transition phases		1	DM1
16	20.07.2015 / 21.07.2015	**Artifacts of the process**: the artifact sets		1	DM6
17	22.07.2015 / 23.07.2015	Management artifacts		1	DM1
18	25.07.2015 / 27.07.2015	Engineering artifacts		1	DM6
19	28.07.2015 / 29.07.2015	Pragmatic artifacts		1	DM6
20	30.07.2015 / 1.08.2015	**Model based software architecture**		1	DM6
21	3.08.2015	TUTORIAL		1	DM2
22	4.08.2015 / 5.08.2015	A management perspective and technical perspective		1	DM1
23	6.08.2015	Review of unit II		1	DM6
24	10.08.2015	Review of unit I		1	DM6
	UNIT-III				

25	11.08.2015	**Workflows of the process**		1	DM1
26	12.08.2015	Software process workflows		1	DM1
27	13.08.2015	Software process workflows		1	DM1
28	13.08.2015	Iteration workflows		1	DM6
29	14.08.2015				
30	15.08.2015	I MID EXAMS			
31	16.08.2015				
		UNIT-III			
32	24.08.2015	**Checkpoints of the process**: major milestones		1	DM1
33	25.08.2015	Minor mile stones		1	DM1
34	26.08.2015	Periodic status assessments		1	DM6
35	27.08.2015	**Iterative process planning**: work breakdown structures		1	DM6
36	29.08.2015	TUTORIAL		1	DM2
37	31.08.2015	Panning guidelines, cost and schedule estimating		1	DM6
38	1.09.2015	Iteration planning process		1	DM6
39	2.09.2015	Pragmatic planning		1	DM1
		UNIT-IV			
40	3.09.2015	**Project organizations and responsibilities**:		1	DM1
41	7.09.2015	Line of business organizations		1	DM6
42	8.09.2015	Project organizations, evolution of organizations		1	DM1
43	9.09.2015	Process automation: automation building blocks		1	DM6
44	10.09.2015 12.09.2015	The project environment		1	DM1
45	14.09.2015 15.09.2015	TUTORIAL		1	DM2
46	16.09.2015	**Project control and process instrumentation**: the seven core metrics		1	DM1

47	19.09.2015 21.09.2015	Management indicators		1	DM6
48	22.09.2015 23.09.2015	Quality indicators		1	DM6
49	26.09.2015	Life cycle expectations		1	DM6
50	28.09.2015	Pragmatic software metrics, metrics automation		1	DM6
		UNIT-V			
51	29.09.2015	**Tailoring the process**		1	DM6
52	30.09.2015	Process discriminants		1	DM1
53	28.09.2015 1.10.2015 5.10.2015	**Future software project management**: modern project profiles		1	DM6
54	6.10.2015	Next generation software economics		1	DM6
55	7.10.2015 9.10.2015 10.10.2015	Modern process transitions		1	DM1
56	12.10.2015	Modern process transitions		1	DM1
57	13.10.2015 14.10.2015 15.10.2015	CCPDS-R Case Study		1	DM6
58	19.10.2015	CCPDS-R Case Study		1	DM6
59	21.10.2015 26.10.2015 27.10.2015	TUTORIAL		1	DM2
60	28.10.2015	Review of Unit -V		1	DM6
61	29.10.2015 31.10.2015	Review of Unit -IV		1	DM6
62	29.09.2015	Review of Unit -III		1	DM6
63	30.09.2015	Additional Topics: SPM tools in open source		1	DM6
64	28.09.2015	Open work bench tool		1	DM6

	1.10.2015				
	5.10.2015				
65	6.10.2015	Old papers		1	DM1
	7.10.2015	Old papers			DM1
66	9.10.2015 10.10.2015			1	

TEXT BOOK :

    1. Software Project Management, Walker Royce: Pearson Education, 2005.

REFERENCES :

    1. Software Project Management, Bob Hughes and Mike Cotterell: Tata McGraw-Hill Edition.

    2. Software Project Management, Joel Henry, Pearson Education.

    3. Software Project Management in practice, Pankaj Jalote, Pearson Education.2005.

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Signature			
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	Ch. Venkata Narayana		Dr. SSS Reddy

T310 – SOFTWARE PROJECT MANAGEMENT

Lecture	: 4 Periods/week	Internal Marks	: 25
Tutorial	:	External Marks	: 75
Credits	: 4	External Examination	: 3 Hrs

UNIT - I

Conventional Software Management: The waterfall model, conventional software Management performance. **Evolution of Software Economics:** Software Economics, pragmatic software cost estimation. **Improving Software Economics:** Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections. **The old way and the new:** The principles of conventional software Engineering, principles of modern software management, transitioning to an iterative process.

UNIT - II

Life cycle phases: Engineering and production stages, inception, Elaboration, construction, transition phases. **Artifacts of the process:** The artifact sets, Management artifacts, Engineering artifacts, programmatic artifacts. **Model based software architectures:** A Management perspective and technical perspective.

UNIT - III

Work Flows of the process: Software process workflows, Iteration workflows.

Checkpoints of the process: Major mile stones, Minor Milestones, Periodic status assessments.

Iterative Process Planning: Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process, Pragmatic planning. Use of Software (Microsoft Project) to Assist in Project Planning Activities

UNIT - IV

Project Organizations and Responsibilities: Line-of-Business Organizations, Project Organizations, evolution of Organizations. **Process Automation:** AutomationBuilding blocks, The Project Environment. **Project Control and Process instrumentation:** The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation.

UNIT - V

Tailoring the Process: Process discriminants. **Future Software Project Management:** Modern Project Profiles, Next generation Software economics, modern process transitions. **Case Study:** The command Center Processing and Display system - Replacement (CCPDS)

TEXT BOOK

Software Project Management, Walker Royce: Pearson Education, 2009.

Prerequisites: Knowledge on Software engineering concepts & Object Oriented analysis & design.

Objective(s):

1. Define and highlight importance of software project management.

2. To Describe and understand the software project management activities

3. To implement project plans through managing people, communications and change

4. To Select and employ mechanisms for tracking your software projects

5. Control your software projects Development

6. Learn how to apply the techniques and develop the documents related to IT project management.

Course Outline:

1. Pitfalls of conventional software project management.

2. Parameters that affect Software Economics

3. Life cycle phases and Artifacts produced for effective Project Management

4. Software process workflows and milestones for Project Management.

5. Roles and Responsibilities in a Software organization involved in Project Management.

6. Next generation Project Management.

Student Learning Out Come(s):

CO1: To understand the basic concepts and issues of software project management & parameters to be considered to improve the software economics.

CO2: Apply SDLC methodology (4 lifecycle phases) for development & identification of artifacts for lifecycle phases.

CO3: To conduct activities necessary to successfully complete and close the Software projects & identification of checkpoints in development process.

CO4: Apply the metrics for assessing the quality & cost, to know about automation building blocks & Organization structure.

CO5: Understands how different management and development practices affect software and process quality.

Detailed Lesson Plan:

S.NO	DATE	TOPIC TO BE COVERED	Actual Date	No.of HOURS	Content delivery Methods
		UNIT-I			
1	22.06.2015 / 23.06.2015	**Conventional software management**		1	DM1
2	24.06.2015	The waterfall model		1	DM1
3	25.06.2015	Conventional software management performance		1	DM6
4	25.06.2015	Evolution of software economics, Software economics		1	DM6
5	27.06.2015	Pragmatic software cost estimation		1	DM1

6	29.06.2015	**Improving software economics**: Size		1	DM1
7	30.06.2015	TUTORIAL		1	DM2
8	1.07.2015	Improving software processes & team effectiveness		1	DM6
9	2.07.2015	Improving automation, peer inspections		1	DM1
10	4.07.2015	**The old way and the new way**: principles of conventional software engineering		1	DM6
11	11.07.2015	Principles of modern software management		1	DM1
12	13.07.2015	Transitioning to an iterative process		1	DM1
		UNIT-II			
13	14.07.2015	**Life cycle phases**: engineering and production stages		1	DM6
14	15.07.2015	Inception ,elaboration		1	DM1
15	16.07.2015 17.07.2015	construction & Transition phases		1	DM1
16	20.07.2015 21.07.2015	**Artifacts of the process**: the artifact sets		1	DM6
17	22.07.2015 23.07.2015	Management artifacts		1	DM1
18	25.07.2015 27.07.2015	Engineering artifacts		1	DM6
19	28.07.2015 29.07.2015	Pragmatic artifacts		1	DM6
20	30.07.2015 1.08.2015	**Model based software architecture**		1	DM6
21	3.08.2015	TUTORIAL		1	DM2
22	4.08.2015 5.08.2015	A management perspective and technical perspective		1	DM1
23	6.08.2015	Review of unit II		1	DM6
24	10.08.2015	Review of unit I		1	DM6
		UNIT-III			

25	11.08.2015	**Workflows of the process**		1	DM1
26	12.08.2015	Software process workflows		1	DM1
27	13.08.2015	Software process workflows		1	DM1
28	13.08.2015	Iteration workflows		1	DM6
29	14.08.2015				
30	15.08.2015	I MID EXAMS			
31	16.08.2015				
		UNIT-III			
32	24.08.2015	**Checkpoints of the process**: major milestones		1	DM1
33	25.08.2015	Minor mile stones		1	DM1
34	26.08.2015	Periodic status assessments		1	DM6
35	27.08.2015	**Iterative process planning**: work breakdown structures		1	DM6
36	29.08.2015	TUTORIAL		1	DM2
37	31.08.2015	Panning guidelines, cost and schedule estimating		1	DM6
38	1.09.2015	Iteration planning process		1	DM6
39	2.09.2015	Pragmatic planning		1	DM1
		UNIT-IV			
40	3.09.2015	**Project organizations and responsibilities**:		1	DM1
41	7.09.2015	Line of business organizations		1	DM6
42	8.09.2015	Project organizations, evolution of organizations		1	DM1
43	9.09.2015	Process automation: automation building blocks		1	DM6
44	10.09.2015 / 12.09.2015	The project environment		1	DM1
45	14.09.2015 / 15.09.2015	TUTORIAL		1	DM2
46	16.09.2015	**Project control and process instrumentation**: the seven core metrics		1	DM1

No.	Date	Topic			
47	19.09.2015 21.09.2015	Management indicators		1	DM6
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49	26.09.2015	Life cycle expectations		1	DM6
50	28.09.2015	Pragmatic software metrics, metrics automation		1	DM6
		UNIT-V			
51	29.09.2015	**Tailoring the process**		1	DM6
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Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**
	Ch. Venkata Narayana		Dr. SSS Reddy

COURSE EDUCATIONAL OBJECTIVES

1. Demonstrate the UML diagrams with system descriptions.

2. Study of testing tools- like Win runner.

COURSE OUTCOMES

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

1. Use industry-standard testing tools such as Winrunner.

2. Develop function oriented and object oriented software design using tools like

   Rational rose

.**Prerequisites**: Fundamentals of Software Engineering and UML

Mapping Course Outcomes with Programme Outcomes

PO->	a	B	C	D	E	F	g	h	i	j	k
CO1		1	2		2				2		2
CO2		1	2		2				2		2

S No.	Tentative Date	Experiments to be covered	Actual Date	Num. of classes	Content Delivery Methods
1.	22-6-2015	Data modelling diagram		3	DM5
2.	29-6-2015	Forward engg of databases in UML		3	DM5
3.	6-7-2015	Reverse engg of databases in UML		3	DM5
4.	13-7-2015	Data modelling using ATM		3	DM5
5.	20-7-2015	Data modelling using online library system		3	DM5
6.	27-7-2015	Introduction to winrunner		3	DM5
7.	3-8-2015	Winrunner experiment-1 recording test scripts in 2 modes		3	DM5
8.	10-8-2015	Calculator testing in context mode		3	DM5
9.	**I MID EXAMINATIONS FROM 17-8-2015 TO 22-8-2015**				
10.	24-8-2015			3	DM5
11.	31-8-2015	Create initial and end conditions		3	DM5
12.	7-9-2015	Synchronization test-1		3	DM5
13.	14-9-2015	Synchronization test-11		3	DM5
14.	21-9-2015	Bitmap verification		3	DM5
15.	28-9-2015	Text verification		3	DM5
16.	5-10-2015	GUI check points		3	DM5
17.	12-10-2015	Database check points		3	DM5
18.	19-10-2015	Test plan for sample application-1		3	DM5
19.	26-10-2015	Test plan for sample application-11		3	DM5
II MID EXAMINATIONS FROM 02-11-2015 TO 7-11-2015					

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	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**
	M.SRI BALA	G.OBUL REDDY	Dr.N.RAVI SHANKAR

Faculty Name : **M.SRI BALA,**ASSIST. PROFESSOOR

Subject Name	:	**STM LAB**	Code	:	P-786
Year	:	2015-2016	**Semester**	:	VII
Degree	:	B.Tech	**Programme**	:	**C.S.E**

COURSE EDUCATIONAL OBJECTIVES

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Mapping Course Outcomes with Programme Outcomes

PO->	a	B	C	D	E	F	g	h	i	j	k
CO1		1	2		2				2		2
CO2		1	2		2				2		2

S No.	Tentative Date	Experiments to be covered	Actual Date	Num. of classes	Content Delivery Methods
20.	23-6-2015	Data modelling diagram		3	DM5
21.	30-6-2015	Forward engg of databases in UML		3	DM5
22.	7-7-2015	Reverse engg of databases in UML		3	DM5
23.	43-7-2015	Data modelling using ATM		3	DM5
24.	21-7-2015	Data modelling using online library system		3	DM5
25.	28-7-2015	Introduction to winrunner		3	DM5
26.	4-8-2015	Winrunner experiment-1 recording test scripts in 2 modes		3	DM5
27.	11-8-2015	Calculator testing in context mode		3	DM5
28.	**I MID EXAMINATIONS FROM 17-8-2015 TO 22-8-2015**				
29.	25-8-2015			3	DM5
30.	01-9-2015	Create initial and end conditions		3	DM5
31.	8-9-2015	Synchronization test-1		3	DM5
32.	15-9-2015	Synchronization test-11		3	DM5
33.	22-9-2015	Bitmap verification		3	DM5
34.	29-9-2015	Text verification		3	DM5
35.	6-10-2015	GUI check points		3	DM5
36.	13-10-2015	Database check points		3	DM5
37.	20-10-2015	Test plan for sample application-1		3	DM5
38.	27-10-2015	Test plan for sample application-11		3	DM5
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