

COURSE HANDOUT

PROGRAM : B.Tech, VI-Sem., CSE
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : Compiler design - S163
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : Dr. D. Veeraiah
COURSE COORDINATOR : Dr. D. Veeraiah
PRE-REQUISITE: knowledge in Theory of Computation

COURSE OBJECTIVE: To introduce the major concept areas of language translation and compiler design and enrich the knowledge in various phases of compiler and its use, code optimization techniques, machine code generation, and use of symbol table. To provide practical programming skills necessary for constructing a compiler.

COURSE OUTCOMES (CO)

CO1: Design and implement lexical analyzer using LEX tool.
CO2: Apply context-free grammar and PDA design concepts to design parsers.
CO3: Design and implement Bottom-Up parser using YACC.
CO4: Create frameworks for syntax directed translation schemes, type checking and intermediate code generation.
CO5: Analyze various code optimization techniques and code generation.

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

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

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

BOS APPROVED TEXT BOOKS:

T1 Alfred V.Aho, Jeffrey D.Ullman, Ravi sethi "Compilers Principles, Techniques and Tools", Pearson Education, 2nd Edition, 2008.

BOS APPROVED REFERENCE BOOKS:

R1 Parag H.Dave, HimanshuB.Dave “Compilers Principles and Practice” Person Education, First Edition, 2012.

R2 Andrew W.appel “Modern compiler implementation in C” Cambridge, Revised Edition, 2010.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A**UNIT-I: OVERVIEW OF COMPILATION**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	28/11/17		TLM1	-	T1	
2.	Course Outcomes	1	29/11/17		TLM1	CO1	-	
3.	Phases of Compilation	1	30/11/17		TLM1	CO1	T1	
4.	Introduction to Lexical Analysis	1	1/12/17		TLM1	CO1	T1	
5.	Lexical Analysis – input buffering	1	5/12/17		TLM1,TLM4	CO1	T1,R1	
6.	Lexical Analysis – Finite Automata	1	6/12/17		TLM1,TLM4	CO1	T1,R1	
7.	Lexical Analysis – Finite Automata	1	7/12/17		TLM1,TLM4	CO1	T1,R1	
8.	TUTORIAL-1	1	8/12/17		TLM3	CO1	-	
9.	Lexical Analysis – Regular expressions	1	12/12/17		TLM1,TLM4	CO1	T1	
10.	Pass & Phase, Interpretation, Bootstrapping	1	13/12/17		TLM1	CO1	T1	
11.	Data Structures in Compilation	1	14/12/17		TLM1	CO1	T1	
12.	LEX	1	15/12/17		TLM1,TLM5	CO1	T1,R1	
13.	TUTORIAL-2	1	19/12/17		TLM3	CO1	-	
14.	Assignment/Quiz-1	1	20/12/17		TLM6	CO1	-	
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II: Context Free Grammars & Top down Parsing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Context Free Grammars	1	21/12/17		TLM1	CO2	T1	
16.	Derivation & Parse Trees	1	22/12/17		TLM1,TLM4	CO2	T1	
17.	Ambiguity, Elimination of Ambiguity	1	27/12/17		TLM1,TLM4	CO2	T1	
18.	Top down Parsing	1	28/12/17		TLM1,TLM4	CO2	T1,R1	
19.	Back Tracking	1	29/12/17		TLM1,TLM4	CO2	T1	
20.	Recursive Descent Parsing	1	2/01/18		TLM1,TLM4	CO2	T1,R1	

21.	TUTORIAL-3	1	3/01/18		TLM3	CO2	-	
22.	Pre-processing Steps required for PP	1	4/01/18		TLM1	CO2	T1	
23.	First & Follow	1	5/01/18		TLM1,TLM4	CO2	T1,R1,R2	
24.	Predictive Parsing	1	9/01/18		TLM1,TLM4	CO2	T1,R2	
25.	LL(1)	1	10/01/18		TLM1,TLM4	CO2	T1,R2	
26.	TUTORIAL-4	1	11/01/18		TLM3	CO2	-	
27.	Assignment/Quiz-3	1	12/01/18		TLM6	CO2	-	
No. of classes required to complete UNIT-II		13			No. of classes taken:			

UNIT-III: Bottom up Parsing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	Introduction	1	15/01/18		TLM1	CO3	T1	
29.	Shift Reduce Parsing	1	23/01/18		TLM1,TLM4	CO3	T1	
30.	LR parsing	1	24/01/18		TLM1,TLM4	CO3	T1,R1	
31.	SLR	2	25/01/18& 30/01/18		TLM1,TLM4	CO3	T1,R1	
32.	TUTORIAL-5	1	31/01/18		TLM3	CO3	-	
33.	CLR	2	01/02/18		TLM1,TLM4	CO3	T1,R1	
34.	LALR	1	02/02/18		TLM1,TLM4	CO3	T1,R1	
35.	Error recovery in parsing	1	06/02/18		TLM1,TLM4	CO3	T1,R1	
36.	Handling Ambiguous grammar	1	07/02/18		TLM1,TLM4	CO3	T1	
37.	YACC	1	08/02/18		TLM1,TLM4	CO3	T1,R1	
38.	TUTORIAL-6	1	09/02/18		TLM3	CO3	-	
39.	Assignment/Quiz-3	1	13/02/18		TLM6	CO3	-	
No. of classes required to complete UNIT-III		14			No. of classes taken:			

UNIT-IV: Semantic Analysis & Run time Storage

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
40.	Syntax directed Translation	1	14/02/18		TLM1	CO4	T1	
41.	S-attributed and L-attributed grammars	1	15/02/18		TLM1,TLM4	CO4	T1,R1	
42.	Type checker	1	16/02/18		TLM1	CO4	T1	
43.	Intermediate code – abstract syntax tree, polish notation, Three address codes	1	20/02/18		TLM1,TLM4	CO4	T1,R1	

44.	Three address codes	1	21/02/18		TLM1,TLM4	CO4	T1,R1	
45.	Tutorial-7	1	22/02/18		TLM3	CO4	-	
46.	Translation of simple statements and control flow statements	1	23/02/18		TLM1,TLM4	CO4	T1	
47.	Run time storage: Storage Organization	1	27/02/18		TLM1	CO4	T1	
48.	Storage allocation strategies	1	28/02/18		TLM1	CO4	T1	
49.	Scope access to local names, parameters	1	1/03/18		TLM1	CO4	T1	
50.	Language facilities for dynamics storage allocation	1	2/03/18		TLM1	CO4	T1	
51.	Tutorial-8	1	6/03/18		TLM3	CO4	-	
52.	Assignment/Quiz-4	1	07/03/18		TLM6	CO4	-	
No. of classes required to complete UNIT-IV		13			No. of classes taken:			

UNIT-V: Code Optimization & Code Generation

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
53.	Code Optimization: Introduction	1	08/03/18		TLM1	CO5	T1	
54.	Principle sources of optimization	1	9/03/18		TLM1	CO5	T1,R1	
55.	Scope, Local & Loop optimization	1	13/03/18		TLM1	CO5	T1,R1	
56.	DAG representation of basic block	1	14/03/18		TLM1,TLM4	CO5	T1,R2	
57.	Code generation: Introduction	1	15/03/18		TLM1	CO5	T1	
58.	TUTORIAL-9	1	16/03/18		TLM3	CO5	-	
59.	Object code forms	1	20/03/18		TLM1	CO5	T1	
60.	Generic code generation algorithm	1	21/03/18		TLM1	CO5	T1	
61.	Register allocation & assignment	1	22/03/18		TLM1,TLM4	CO5	T1	
62.	Peephole optimization	1	23/03/18		TLM1,TLM4	CO5	T1	
63.	TUTORIAL-10	1	27/03/18		TLM3	CO5	-	
64.	Assignment/Quiz-5	1	28/03/18		TLM6	CO5	-	
No. of classes required to complete UNIT-V		12			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
65.	Static Single Assignment	1	29/03/18		TLM1,TLM4		T1	
66.	Use Of Compiler In Computer Architecture	2	31/03/13		TLM1,TLM4		T1	

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

- Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

Course Instructor

Course Coordinator

Module Coordinator

HOD

COURSE HANDOUT

PROGRAM : B.Tech., VI-Sem., CSE-'A'
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : ARTIFICIAL INTELLIGENCE - S 137
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : Dr. P. M. ASHOK KUMAR
COURSE COORDINATOR :
PRE-REQUISITE: Discrete Mathematics, Design Analysis of Algorithms

COURSE OBJECTIVE :

This course is used to solve various AI problems using various problem solving techniques and constraint satisfaction problems. This course gives better understanding of problem solving techniques like propositional and predicate logic, bayes theorem, fuzzy logic, Neural Network, game playing, expert systems, Robotics and swarm intelligence.

COURSE OUTCOMES(CO)

- CO1: Ability to understand AI problems and techniques of solving problems, agents and their types.
CO2: Ability to understand knowledge and its representation techniques, logic and algorithms implementation in different kinds of logic.
CO3: Students able to know uncertainty and certainty, factors and theories and appropriate examples.
CO4: Student can understand various planning techniques and learning techniques.
CO5: He can able to know various advanced topics like expert systems, robotics and swarm intelligent systems.

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

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

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

BOS APPROVED TEXT BOOKS:

- T1** Elaine Rich, Kevin Knight and Shivashankar B. Nair, "Artificial Intelligence", TMH, Third edition, 2009. (UNITs I, II, III & V)
- T2** Stuart J. Russell and Peter Norvig, "Artificial Intelligence: A Modern Approach", Pearson Education Asia, Second edition, 2003. (UNIT IV)
- T3** N. P. Padhy, "Artificial Intelligence and Intelligent System", Oxford University Press, Second edition, 2005. (UNIT V)

BOS APPROVED REFERENCE BOOKS:

- R1** Rajendra Akerkar, "Introduction to Artificial Intelligence", PHI, 2005.
- R2** Patrick Henry Winston, "Artificial Intelligence", Pearson Education Inc., Third edition, 2001.
- R3** Eugene Charniak and Drew Mc Dermott, "Introduction to Artificial Intelligence", Addison-Wesley, ISE Reprint, 1998.
- R4** Nils J. Nilsson, "Artificial Intelligence - A New Synthesis", Harcourt Asia Pvt. Ltd., Morgan Kaufmann, 1988.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A**UNIT-I : Introduction to AI**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	History of AI	1	27-11-2017		TLM1	CO1	T1	
2.	Intelligent systems	1	28-11-2017		TLM1	CO1	T1	
3.	Heuristic search techniques	1	02-12-2017		TLM1	CO1	T1	
4.	Heuristic search techniques	1	4-12-2017		TLM1	CO1	T1	
5.	TUTORIAL-1	1	5-12-2017		TLM1	CO1	T1	
6.	Best first search	1	8-12-2017		TLM1	CO1	T1	
7.	Problem reduction	1	9-12-2017		TLM2	CO1	T1	
8.	TUTORIAL-2	1	11-12-2017		TLM3	CO1	T1	
9.	Constraint satisfaction problem	1	12-12-2017		TLM2, TLM8	CO1	T1	
10.	Means ends analysis	1	15-12-2017		TLM2, TLM8	CO1	T1	
No. of classes required to complete UNIT-I		Test-1			No. of classes taken:			

UNIT-II : KNOWLEDGE REPRESENTATION

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
11.	Approaches of knowledge representation and issues	1	16-12-2017		TLM1	CO2	T1	
12.	Knowledge based agents	1	18-12-2017		TLM1	CO2	T1	
13.	Propositional logic	1	19-12-2017		TLM1	CO2	T1	

14.	Propositional logic	1	22-12-2017		TLM1	CO2	T1	
15.	Predicate logic	1	23-12-2017		TLM1	CO2	T1	
16.	Unification	1	26-12-2017		TLM1	CO2	T1	
17.	Resolution	1	29-12-2017		TLM1	CO2	T1	
18.	TUTORIAL-3	1	30-12-2017		TLM3	CO2	T1	
19.	Weak slot filler structures	1	2-01-2018		TLM2	CO2	T1	
20.	Strong slot filler structures	1	5-01-2018		TLM2	CO2	T1	
21.	Revision for I st mid examination	1	6-01-2018		TLM2	CO2	T1	
22.	Test& Quiz	1	8-01-2018		TLM6	CO2	T1	

UNIT-III : REASONING UNDER UNCERTAINTY

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
23.	Logics of non monotonic reasoning	1	9-01-2018		TLM1	CO3	T1	
24.	Logic implementation	1	12-01-2018		TLM1	CO3	T1	
25.	Probability notation, Bayes theorem	1	13-01-2018		TLM1	CO3	T1	
26.	Bayes rules and networks	1	22-01-2018		TLM1, TLM8	CO3	T1	
27.	TUTORIAL-5	1	23-01-2018		TLM3	CO3	T1	
28.	certainty factors and rules	1	27-01-2018		TLM2	CO3	T1	
29.	Rule based systems	1	29-01-2018		TLM2, TLM8	CO3	T1	
30.	Dempster shafer theory	1	30-01-2018		TLM2	CO3	T1	
31.	Fuzzy logic	1	1-02-2018		TLM2	CO3	T1	
32.	TUTORIAL-6	1	2-02-2018		TLM3	CO3	T1	
33.	Comparison of various above mentioned methods	1	3-02-2018		TLM2, TLM8	CO3	T1	
34.	Assignment	1	5-02-2018		TLM6	CO3	T1	
No. of classes required to complete UNIT-III					No. of classes taken:			

UNIT-IV : PLANNING AND LEARNING

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
35.	Planning with state space search	1	6-02-2018		TLM1	CO4	T2	
36.	Conditional planning, Continuous planning	1	9-02-2018		TLM1	CO4	T2	
37.	Planning types, Multi agent planning	1	10-02-2018		TLM1	CO4	T2	
38.	Types of learning ,inductive learning	1	12-02-2018		TLM1	CO4	T2	
39.	TUTORIAL-7	1	16-02-2018		TLM3	CO4	T2	
40.	Reinforcement learning	1	17-02-2018		TLM2	CO4	T2	
41.	Learning decision trees	1	19-02-2018		TLM2	CO4	T2	
42.	Neural net learning and genetic learning	1	20-02-2018		TLM2, TLM8	CO4	T2	
43.	Assignment & Quiz	1	23-02-2018		TLM6	CO4	T2	
No. of classes required to complete UNIT-IV					No. of classes taken:			

UNIT-V : ADVANCED TOPICS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
44.	Game playing	1	24-02-2018		TLM1	CO5	T3	
45.	min max procedure	1	26-02-2018		TLM1	CO5	T3	
46.	Adding alpha-beta cut offs	1	27-02-2018		TLM1	CO5	T3	
47.	Expert systems Introduction	1	3-03-2018		TLM1	CO5	T3	
48.	Expert systems, representation, shells	1	5-03-2018		TLM1	CO5	T3	
49.	Knowledge acquisition	1	6-03-2018		TLM1	CO5	T3	
50.	TUTORIAL-8	1	9-03-2018		TLM3	CO5	T3	
51.	Robotics hardware	1	10-03-2018		TLM2	CO5	T3	
52.	robotic perception	1	12-03-2018		TLM2	CO5	T3	
53.	Planning application domains	1	13-03-2018		TLM2	CO5	T3	
54.	Swarm intelligent systems	1	16-03-2018		TLM2	CO5	T3	

55.	Ant colony system	1	17-03-2018		TLM2	CO5	T3	
56.	Ant colony Development	1	19-03-2018		TLM2	CO5	T3	
57.	Application and working of ant colony system	1	20-03-2018		TLM2	CO5	T3	
58.	SLIP TEST	1	23-03-2018		TLM6	CO5	T3	
No. of classes required to complete UNIT-V					No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
59.	Beyond the syllabus: Advanced swarm intelligence systems	1	24-03-2018		TLM2	CO5	T3	
60.	Particle swarm optimization algorithm	1	26-03-2018		TLM2	CO5	T3	
61.	PSO development and Applications	1	27-03-2018		TLM2	CO5	T3	
62.	Directed Models	1	31-03-2018		TLM2	CO5	T3	

Teaching Learning Methods

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	27-11-2017	13-01-2018	7
I Mid Examinations	16-01-2018	20-01-2018	1
II Phase of Instructions	22-01-2018	31-03-2018	7
II Mid Examinations	02-04-2018	07-04-2018	1
Preparation and Practicals	09-04-2018	21-04-2018	2
Semester End Examinations	23-04-2018	05-05-2018	2

EVALUATION PROCESS:

Evaluation Task	COs	Marks
Assignment/Quiz – 1	1	A1=5
Assignment/Quiz – 2	2	A2=5
I-Mid Examination	1,2	B1=20
Assignment/Quiz – 3	3	A3=5
Assignment/Quiz – 4	4	A4=5
Assignment/Quiz – 5	5	A5=5
II-Mid Examination	3,4,5	B2=20

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

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

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

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

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

PROGRAMME OUTCOMES (POs)

Engineering Graduates will be able to:

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

relevant to the professional engineering practice.

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in social and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the **engineering and management principles and apply these to one's own work, as a member and leader** in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes:

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

COURSE HANDOUT

Part-A

PROGRAM : B.Tech., VI-SEM,CSE
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : Distributed Operating systems
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : A.Praneetha
COURSE COORDINATOR :
PRE-REQUISITE: Knowledge in operating system concepts.

COURSE EDUCATIONAL OBJECTIVES (CEOs) : This course provides a comprehensive introduction to understand the underlying principles, techniques and approaches which constitute a coherent body of knowledge in operating systems. In particular, the course will consider inherent functionality and processing of program execution. The emphasis of the course will be placed on understanding how the various elements that underlie operating system interact and provides services for execution of application software.

COURSE OUTCOMES (COs)

After completion of the course, the student will be able to

CO1: Identify the hardware and software concepts to design the communication model in Distributed System.

CO2: Evaluate the implementation of process, thread, file systems and processors in Distributed system.

CO3: Analyze Clock Synchronization protocols in Distributed system as well as Deadlock handling mechanism.

CO4: Compare Shared memory Multiprocessors used in Distributed System.

CO5: Examine the case study of CHROUS, MACH distributed operating systems.

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

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

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

BOS APPROVED TEXT BOOKS:

1. Andrew S Tanenbaum Distributed Operating Systems Pearson Education ,1995.

BOS APPROVED REFERENCE BOOKS:

Pradeep K Sinha -Distributed Operating System: Concepts and Design –Wiley Publications, 1996

Part-B**COURSE DELIVERY PLAN (LESSON PLAN): Section-A/B/C****UNIT-I : Introduction to Distributed Systems & Communication in Distributed Systems**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	27-11-17		1,2,3	CO1	1	
2.	Distributed systems Introduction	1	28-11-17		1,2,3	CO1	1	
3.	Its goals	1	30-11-17		1,2,3	CO1	1	
4.	Hardware concepts	1	04-12-17		1,2,3	CO1	1	
5.	Software concepts	1	05-12-17		1,2,3	CO1	1	
6.	Design issues	1	07-12-17		1,2,3	CO1	1	
7.	Design issues	1	11-12-17		1,2,3	CO1	1	
8.	Tutorial-1	1	12-12-17		1,2,3	CO1	1	
9.	Layered protocols	1	14-12-17		1,2,3	CO1	1	
10.	ATM Networks	1	16-12-17		1,2,3	CO1	1	
11.	Client Server model	1	18-12-17		1,2,3	CO1	1	
12.	RPC	1	19-12-17		1,2,3	CO1	1	
13.	Group communication	1	21-12-17		1,2,3	CO1	1	
14.	Tutorial-2	1	23-12-17		1,2,3	CO1	1	
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II : Process and Processors & Distributed File Systems

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Threads, system models	1	26-12-17		1,2,3	CO2	1	
16.	processor allocation	1	28-12-17		1,2,3	CO2	1	
17.	Scheduling	1	30-12-17		1,2,3	CO2	1	
18.	Fault Tolerance	1	01-01-18		1,2,3	CO2	1	
19.	Real Time Distributed Systems.	1	02-01-18		1,2,3	CO2	1	

20.	Tutorial-3	1	04-01-18		1,2,3	CO2	1	
21.	File system design	1	06-01-18		1,2,3	CO2	1	
22.	File system implementation	1	08-01-18		1,2,3	CO2	1	
23.	Trends in Distributed File	1	09-01-18		1,2,3	CO2	1	
24.	Systems	1	11-01-18		1,2,3	CO2	1	
25.	Tutorial-4	1			1,2,3	CO2	1	
No. of classes required to complete UNIT-II		11			No. of classes taken:			

UNIT-III: Synchronization in Distributed Systems

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
26	Introduction	1	22-01-18		1,2,3	CO3	1	
27	Clock synchronization	1	23-01-18		1,2,3	CO3	1	
28	Clock synchronization	1	25-01-18		1,2,3	CO3	1	
29	Mutual Exclusion	1	27-01-18		1,2,3	CO3	1	
30	Mutual Exclusion	1	29-01-18		1,2,3	CO3	1	
31	Tutorial-5	1	30-01-18		1,2,3	CO3	1	
32	Election Algorithms	1	01-02-18		1,2,3	CO3	1	
33	Election Algorithms	1	03-02-18		1,2,3	CO3	1	
34	Atomic Transactions	1	05-02-18		1,2,3	CO3	1	
35	Atomic Transactions	1	06-02-18		1,2,3	CO3	1	
36	Deadlocks	1	08-02-18		1,2,3	CO3	1	
37	Tutorial-6	1	12-02-18		1,2,3	CO3	1	
38	Revision	1	15-02-18		1,2,3	CO3	1	
No. of classes required to complete UNIT-III		13			No. of classes taken:			

UNIT-IV : Distributed Shared Memory

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
39.	Introduction to Distributed	1	17-02-18		1,2,3	CO4	1	
40.	Shared Memory	1	19-02-18		1,2,3	CO4	1	

41.	Bus based multiprocessors	1	20-02-18		1,2,3	CO4	1	
42.	Bus based multiprocessors	1	22-02-18		1,2,3	CO4	1	
43.	Tutorial-7	1	24-02-18		1,2,3	CO4	1	
44.	Ring based multiprocessors	1	26-02-18		1,2,3	CO4	1	
45.	Switched multiprocessors	1	27-02-18		1,2,3	CO4	1	
46.	NUMA multiprocessors	1	01-03-18		1,2,3	CO4	1	
47.	Revision	1	03-03-18		1,2,3	CO4	1	
48.	Comparison of Shared Memory	1	05-03-18		1,2,3	CO4	1	
49.	Tutorial-8	1	06-03-18		1,2,3	CO4	1	
No. of classes required to complete UNIT-IV		12			No. of classes taken:			

UNIT-V : Case Studies

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
50.	MACH OS Introduction	1	08-03-18		1,2,3	CO5	1	
51.	Internal topics of MACH OS	1	12-03-18		1,2,3	CO5	1	
52.	Internal topics of MACH OS	1	13-03-18		1,2,3	CO5	1	
53.	Tutorial-9	1	15-03-18		1,2,3	CO5	1	
54.	CHORUS OS Introduction	1	17-03-18		1,2,3	CO5	1	
55.	Internal topics of CHORUS OS	1	19-03-18		1,2,3	CO5	1	
56.	Internal topics of CHORUS OS	1	20-03-18		1,2,3	CO5	1	
57.	Tutorial-10	1	22-03-18		1,2,3	CO5	1	
58.	Review	1	24-03-18		1,2,3	CO5	1	
No. of classes required to complete UNIT-V		9			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign
59.								
60.								
61.								

Teaching Learning Methods

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

Part - C

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering

fundamentals, and an engineering specialization to the solution of complex engineering problems.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

A.Praneetha			
Course Instructor	Course Coordinator	Module Coordinator	HOD

COURSE HANDOUT

PROGRAM : B.Tech., VI-Sem., CSE
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : Information Security - S272
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : K SUNDEEP SARADHI
COURSE COORDINATOR : Dr. K.S.M.V.KUMAR
PRE-REQUISITE: Knowledge of security issues in using a network

COURSE OBJECTIVE : This course provides the knowledge to understand the basic concept of Cryptography and Network Security , types of ciphers and various symmetric and asymmetric algorithms. Also provides the knowledge on digital signatures , viruses , intruders and firewalls.

COURSE OUTCOMES (COs)

CO1: Demonstrate the use of encryption algorithm for achieving data confidentiality

CO2: Apply Secure hash functions for attaining data integrity

CO3: Analyze the security mechanisms for achieving authentication

CO4: Analyze the protocols for achieving availability, access control to resources and protocols for non-repudiation

CO5: Explore the threats and remedial measures for system security

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

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

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

BOS APPROVED TEXT BOOKS:

T1 William Stallings, Network Security Essentials (Applications and Standards), Pearson Education.

BOS APPROVED REFERENCE BOOKS:

R1 Stallings, Cryptography and Network Security, PHI/Pearson, Third edition

R2 Whitman, Principles of Information Security, Thomson

R3 Robert Bragg, Mark Rhodes, Network Security: The complete reference, TMH

R4 Buchmann, Springer Introduction to Cryptography.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A**UNIT-I**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Network Security	1	27.11.17		TLM1	CO1	T1	
2.	Security Attacks	1	29.11.17		TLM1/ TLM2	CO1	T1	
3.	Security Services and Mechanisms Model for Internetwork security	1	01.12.17		TLM1/ TLM2	CO1	T1	
4.	Internet Standards and RFCs Conventional Encryption Principles	1	02.12.17		TLM1/ TLM2	CO1	T1	
5.	Conventional Encryption Algorithms - DES	2	06.12.17		TLM1/ TLM2	CO1	T1	
6.	Conventional Encryption Algorithms - Triple DES	1	08.12.17		TLM1/ TLM2	CO1	T1	
7.	ASSIGNMENT / QUIZ -1	1	11.12.17		TLM6	CO1		
8.	Cipher Block Modes of Operations	2	15.12.17		TLM1/ TLM2	CO1	T1	
9.	Location of Encryption Devices	1	16.12.17		TLM1	CO1	T1	
10.	Key Distribution	1	18.12.17		TLM1/ TLM2	CO1	T1	
11.	Approaches of Message Authentication	1	20.12.17		TLM1/ TLM2	CO1	T1	
12.	Secure Hash Functions	1	22.12.17		TLM1/ TLM2	CO1	T1	
13.	SHA – ALGORITHM	1	23.12.17		TLM1/ TLM2	CO1	T1	
14.	HMAC ALGORITHM	1	27.12.17		TLM1/ TLM2	CO1	T1	
15.	TUTORIAL	1	29.12.17		TLM3	CO1		
No. of classes required to complete UNIT-I		17			No. of classes taken:			

UNIT-II

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
16.	Public Key Cryptography principles	1	30.12.17		TLM1/ TLM2	CO2	T1	
17.	Public Key Cryptography Algorithms	2	05.01.18		TLM1/ TLM2	CO2	T1	
18.	Digital Signatures Digital Certificates	1	06.01.18		TLM1/ TLM2	CO2	T1	
19.	Certificate Authority	1	08.01.18		TLM1/ TLM2	CO2	T1	
20.	ASSIGNMENT / QUIZ	1	10.01.18		TLM6	CO2	T1	
21.	Key Management	1	12.01.18		TLM1/ TLM2	CO2	T1	
22.	Kerberos	1	22.01.18		TLM1/ TLM2	CO2	T1	
23.	X.509 Directory	2	24.01.18		TLM1/ TLM2	CO2	T1	
24.	Authemtication Service	1	26.01.18		TLM1/ TLM2	CO2	T1	
25.	TUTORIAL	1	27.01.18		TLM3	CO2	T1	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
26.	Pretty Good Privacy (PGP)	1	29.01.18		TLM1/ TLM2	CO3	T1	
27.	PGP - Messages	1	31.01.18		TLM1/ TLM2	CO3	T1	
28.	S/MIME introduction	1	02.02.18		TLM1/ TLM2	CO3	T1	
29.	S/MIME Content Types & Transfer Encodings	1	03.02.18		TLM1/ TLM2	CO3	T1	
30.	S/MIME Functionality & Messages	1	05.02.18		TLM1/ TLM2	CO3	T1	
31.	ASSIGNMENT / QUIZ	1	07.02.18		TLM6	CO3	T1	
32.	IP Security Architecture	1	09.02.18		TLM1/ TLM2	CO3	T1	

33.	Authentication Header	1	12.02.18		TLM1/ TLM2	CO3	T1	
34.	Encapsulating Security Payload	1	14.02.18		TLM1/ TLM2	CO3	T1	
35.	Combining Security Associations	1	16.02.18		TLM1/ TLM2	CO3	T1	
36.	TUTORIAL	1	17.02.18		TLM3	CO3	T1	
No. of classes required to complete UNIT-III		11			No. of classes taken:			

UNIT-IV

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
37.	Web Security Requirements	1	19.02.18		TLM1/ TLM2	CO4	T1	
38.	Secure Socket Layer (SSL)	1	21.02.18		TLM1/ TLM2	CO4	T1	
39.	SSL Record Protocol	1	23.02.18		TLM1/ TLM2	CO4	T1	
40.	Change Cipher Spec Protocol Alert Protocol	1	24.02.18		TLM1/ TLM2	CO4	T1	
41.	SSL Handshake Protocol	1	26.02.18		TLM1/ TLM2	CO4	T1	
42.	Transport Layer Security	1	28.02.18		TLM1/ TLM2	CO4	T1	
43.	ASSIGNMENT / QUIZ	1	02.03.18		TLM6	CO4	T1	
44.	SET Requirements & Features	1	03.03.18		TLM1/ TLM2	CO4	T1	
45.	SET Participants & Sequence of events	1	05.03.18		TLM1/ TLM2	CO4	T1	
46.	Construction of Dual Signature & SET Transaction Types	1	07.03.18		TLM1/ TLM2	CO4	T1	
47.	Purchase Request by Cardholder	1	09.03.18		TLM1/ TLM2	CO4	T1	
48.	Customer Purchase Request Verification by Merchant	1	12.03.18		TLM1/ TLM2	CO4	T1	
49.	TUTORIAL	1	14.03.18		TLM3	CO4	T1	
No. of classes required to complete UNIT-IV		13			No. of classes taken:			

UNIT-V

S.No.	Topics to be covered	No. of Classes	Tentative Date of	Actual Date of	Teaching Learning	Learning Outcome	Text Book	HOD Sign
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		Required	Completion	Completion	Methods	COs	followed	Weekly
50.	Intruders	1	16.03.18		TLM1	CO5	T1	
51.	Viruses and Related Threats	1	17.03.18		TLM1/ TLM2	CO5	T1	
52.	Virus Countermeasures	1	19.03.18		TLM1/ TLM2	CO5	T1	
53.	ASSIGNMENT / QUIZ	1	21.03.18		TLM6	CO5	T1	
54.	Firewall Characteristics	1	23.03.18		TLM1	CO5	T1	
55.	Types of Firewalls	1	24.03.18		TLM1/ TLM2	CO5	T1	
56.	Trusted System	1	26.03.18		TLM1/ TLM2	CO5	T1	
57.	Introduction to Database Security and authorization	1	28.03.18		TLM1/ TLM2	CO5	T1	
58.	TUTORIAL	1	30.03.18		TLM3	CO5	T1	
59.	REVISION	1	31.03.18		TLM1/ TLM2	CO5	T1	
No. of classes required to complete UNIT-V		10			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
60.	Substitution & Transposition Techniques	1	05.12.17		TLM1	CO1	R1	
61.	Fermat's & Eluers Theorem	1	02.01.17		TLM1	CO2	R1	
62.	Chinese Remainder Theorem	1	05.01.17		TLM1	CO2	R1	

Teaching Learning Methods

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

EVALUATION PROCESS:

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

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

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

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

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

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

PROGRAM OUTCOMES

Engineering Graduates will be able to:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of

data, and synthesis of the information to provide valid conclusions.

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

PROGRAM SPECIFIC OUTCOMES

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

K.SUNDEEP SARADHI	Dr.K.S.M.V.KUMAR		
Course Instructor	Course Coordinator	Module Coordinator	HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi,

NAAC Accredited with 'A' grade, Certified by ISO 9001:2015)

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

COURSE HANDOUT

PROGRAM	: B.Tech., VI-Sem., CSE
ACADEMIC YEAR	: 2017-18
COURSE NAME & CODE	: UML Design - S 415
L-T-P STRUCTURE	: 3-1-0
COURSE CREDITS	: 3
COURSE INSTRUCTOR	: Dr .O.Rama Devi
COURSE COORDINATOR	: Dr. Ch. Venkata Narayana Reddy
PRE-REQUISITE:	Knowledge of Object Oriented Methods

COURSE OBJECTIVE:

The main objective of this course is that the students become familiar with all phases of OOAD and master the main features of the UML. They come to know about the main concepts of Object Technologies and how to apply them at work and develop the ability to analyze and solve challenging problem in various domains. And Learn the Object Design Principles and understand how to apply them towards implementation.

COURSE OUTCOMES (CO):

- CO1:** Select the basic elements of modeling such as Things, Relationships and Diagrams depending on the views of UML Architecture and SDLC.
- CO2:** Apply basic and Advanced Structural Modeling Concepts for designing real time applications.
- CO3:** Design Class and Object Diagrams that represent Static Aspects of a Software System.
- CO4:** Analyze Dynamic Aspects of a Software System using Use Case, Interaction and Activity Diagrams.
- CO5:** Apply techniques of State Chart Diagrams and Implementation Diagrams to model behavioral aspects and Runtime environment of Software Systems

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

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

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

BOS APPROVED TEXT BOOKS:

T1 Grady Booch, James Rumbaugh, Ivar Jacobson “The Unified Modeling Language User Guide, Pearson Education, 2nd edition.

BOS APPROVED REFERENCE BOOKS:

R1 Meilir Page-Jones: Fundamentals of Object Oriented Design in UML, Pearson Education.

R2 Pascal Roques: Modeling Software Systems Using UML2, WILEY- Dreamtech India Pvt. Ltd.

R3 Atul Kahate: Object Oriented Analysis & Design, TMH Companies.

R4 Craig Larman, Applying UML and Patterns: An introduction to Object – Oriented Analysis and Design and Unified Process, Pearson Education.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A**UNIT – 1: INTRODUCTION TO UML**

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Why Modeling? and Importance of Modeling	1	27-11-17		TLM1	CO1	T1	
2.	Principles of Modeling and Object Oriented Modeling	1	28-11-17		TLM1	CO1	T1	
3.	Overview of the UML	1	29-11-17		TLM1	CO1	T1	
4.	Conceptual Model of the UML & Building Blocks: Things – Part 1	1	30-11-17		TLM1, TLM2, TLM8	CO1	T1, R1	
5.	Building Blocks: Things – Part 2	1	4-12-17		TLM1, TLM2, TLM8	CO1	T1, R1	
6.	Relationships with Examples & UML Diagrams	1	5-12-17		TLM1, TLM2, TLM8	CO1	T1, R1	
7.	Extensible Mechanisms and Architecture, Extensible Mechanisms and Architecture	1	6-12-17		TLM1, TLM2	CO1	T1, R1	
8.	TUTORIAL – 1	1	7-12-17		TLM1, TLM2, TLM8	CO1	T1	
9.	Assignment / Quiz – 1	1	11-12-17		TLM1, TLM2	CO1	T1	
No. of classes required to complete UNIT-I:		9	No. of classes taken:					

UNIT – 2: BASIC AND ADVANCED STRUCTURAL MODELING

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly	
10.	Classes	1	14-12-17		TLM1, TLM2	CO2	T1		
11.	Relationships in Class Diagrams	2	18-12-17		TLM1, TLM2	CO2	T1		
12.	Common Mechanisms of Class Diagram	1	20-12-17		TLM1, TLM2	CO2	T1		
13.	Different Diagrams	1	21-12-17		TLM1, TLM2	CO2	T1		
14.	Advanced Classes	2	26-12-17		TLM1, TLM2	CO2	T1, R2		
15.	Advanced Relationships	2	28-12-17		TLM1, TLM2	CO2	T1, R2		
16.	Interfaces	1	2-1-18		TLM1, TLM2	CO2	T1, R2		
17.	Types & Roles	1	3-1-18		TLM1, TLM2	CO2	T1, R2		
18.	Packages	1	4-1-18		TLM1, TLM2	CO2	T1, R2		
19.	Case Study	1	8-1-18		TLM9	CO2	T1		
20.	TUTORIAL – 2	1	9-1-18		TLM3	CO2	---		
21.	Assignment / Quiz – 2	1	10-1-18		TLM6	CO2	---		
No. of classes required to complete UNIT-II:		15	No. of classes taken:						

UNIT – 3: CLASS & OBJECT DIAGRAMS

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
22.	Class Diagrams: Terms & Concepts of Class Diagram	1	11-1-18		TLM1, TLM2	CO3	T1, R2	
23.	Modeling Techniques for Class Diagram	2	22-1-18		TLM1, TLM2, TLM8	CO3	T1, R2	
24.	Case Study	1	24-1-18		TLM9	CO3	T1	
25.	Object Diagrams: Terms & Concepts	1	25-1-18		TLM1, TLM2	CO3	T1, R2	
26.	Modeling Techniques for Object Diagram	1	29-1-18		TLM1, TLM2, TLM8	CO3	T1, R2	

27.	Case Study	1	30-1-18		TLM9	CO3	T1	
28.	TUTORIAL – 3	1	31-1-18		TLM3	CO3	---	
29.	Assignment / Quiz – 3	1	1-2-18		TLM6	CO3	---	
No. of classes required to complete UNIT-III:		9	No. of classes taken:					

UNIT – 4: BASIC BEHAVIORAL MODELING

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
30.	Interactions	2	5-2-18		TLM1, TLM2	CO4	T1	
31.	Interaction Diagrams – Part 1	1	7-2-18		TLM1, TLM2	CO4	T1	
32.	Interaction Diagrams – Part 2	1	8-2-18		TLM1, TLM2, TLM8	CO4	T1	
33.	Use Cases	1	12-2-18		TLM1, TLM2	CO4	T1	
34.	Use Case Diagrams	1	13-2-18		TLM1, TLM2, TLM8	CO4	T1	
35.	Activity Diagrams – Part 1	1	14-2-18		TLM1, TLM2	CO4	T1	
36.	Activity Diagrams – Part 2	1	15-2-18		TLM1, TLM2, TLM8	CO4	T1	
37.	Case Study	1	19-2-18		TLM9	CO4	T1	
38.	TUTORIAL – 4	1	20-2-18		TLM3	CO4	---	
39.	Assignment / Quiz – 4	1	21-2-18		TLM6	CO4	---	
No. of classes required to complete UNIT-IV		11	No. of classes taken:					

UNIT – 5: ADVANCED BEHAVIORAL MODELING & ARCHITECTURAL MODELING

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
40.	Advanced Behavioral Modeling: Events and Signals	1	22-2-18		TLM1, TLM2	CO5	T1	
41.	State Machines	2	26-2-18		TLM1, TLM2	CO5	T1	
42.	Processes and Threads	1	28-2-18		TLM1,	CO5	T1	

					TLM2		
43.	Time and Space	1	1-3-18		TLM1, TLM2	CO5	T1
44.	State Chart Diagrams	2	5-3-18		TLM1, TLM2, TLM8	CO5	T1
45.	Architectural Modeling: Component and Deployment	1	7-3-18		TLM1, TLM2	CO5	T1
46.	Deployment	2	12-3-18		TLM1, TLM2	CO5	T1
47.	Case Study	1	14-3-18		TLM9	CO5	T1
48.	TUTORIAL - 5	1	15-3-18		TLM3	CO5	---
49.	Assignment / Quiz - 5	1	19-3-18		TLM6	CO5	---
No. of classes required to complete UNIT-V		13	No. of classes taken:				

Contents beyond the Syllabus(if any)

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
50.	Introduction to Design Patterns	1	20-3-18					
51.	Catalog of Design Pattern	1	21-3-18					
52.	How Design Patterns solve day-to-day problems?	1	22-3-18					

Teaching Learning Methods

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions	27-11-2017	13-01-2018	7W
Sankranti Holidays	14-01-2018	15-01-2018	2 Days
I Mid Examinations	16-01-2018	20-01-2018	1W
II Phase of Instructions	22-01-2018	31-03-2018	9W + (1W CRT)
II Mid Examinations	02-04-2018	07-04-2018	1W
Preparation and Practicals	09-04-2018	21-04-2018	2W
Semester End Examinations	23-04-2018	05-05-2018	2W

EVALUATION PROCESS:

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

Course Instructor

Course Coordinator

Module Coordinator

HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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L B Reddy Nagar, Mylavaram-521 230, Krishna District, Andhra Pradesh.

COURSE HANDOUT

PROGRAM : B.Tech., VI-Sem., CSE - A
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : WEB TECHNOLOGIES – S425
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : A. SUDHAKAR
COURSE COORDINATOR : A. SUDHAKAR
PRE-REQUISITE: C, C++, JAVA Languages

COURSE OBJECTIVE: On completion of this course, a student will be familiar with client server architecture and able to develop a web application using java technologies. Students will gain the skills and project-based experience needed for entry into web application and development careers

COURSE OUTCOMES (CO)

- CO1: Design web pages with HTML & DHTML.
CO2: Apply basic concepts of XML, DOM & SAX and Java Beans to solve real world problems.
CO3: Design dynamic web pages using server side component Servlets.
CO4: Create real world web applications using JSP.
CO5: Apply Swings & Struts framework for application development.

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

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

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

BOS APPROVED TEXT BOOKS:

T1	Chris Bates ,Web Programming, building internet applications, WILEY Dreamtech. (UNITS-1, 2, 3, 4) 2nd edition.
T2	Bill Siggelkow, S P D ,Jakarta Struts Cookbook , O'Reilly (UNIT-5)

BOS APPROVED REFERENCE BOOKS:

R1	Sebesta ,Programming world wide web, Pearson
R2	Marty - Hall and Larry Brown ,Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES , Pearson
R3	3. Dietel and Nieto ,Internet and World Wide Web , How to program by PHI/Pearson Education Asia.
R4	4. Sebesta, Programming world wide web, Java Server Pages, Pekowsky, Pearson.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B**UNIT-I: HTML, CSS, JAVASCRIPT AND DHTML**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction & COs explanation	1	28/11/17		TLM1, TLM5	CO1	T1, R1	
2.	Introduction to HTML	1	29/11/17		TLM1, TLM5	CO1	T1, R1	
3.	HTML basic Tags: Lists, Formatting Tags.	1	30/11/17		TLM1, TLM5	CO1	T1, R1	
4.	Table Tags and its Attributes, Image Tag and its Attributes	1	1/12/17		TLM1, TLM5	CO1	T1, R1	
5.	Links - Internal & External - Framesets - Nested Frames	1	5/12/17		TLM1, TLM5	CO1	T1, R1	
6.	HTML Form Elements and its attributes	1	6/12/17		TLM1, TLM5	CO1	T1, R1	
7.	Cascading Style Sheets- Explanation, Importance, Basics	1	7/12/17		TLM1, TLM5	CO1	T1, R1	
8.	Types of Cascading Style Sheets	1	8/12/17		TLM1, TLM5	CO1	T1, R1	
9.	Introduction to Java Scripts	1	12/12/17		TLM1, TLM5	CO1	T1, R1	
10.	Usage of Objects in Java Script	1	13/12/17		TLM1, TLM5	CO1	T1, R1	
11.	Regular expressions in Java Script	1	14/12/17		TLM1, TLM5	CO1	T1, R1	
12.	Java Script Form Validation	1	15/12/17		TLM1, TLM5	CO1	T1, R1	
13.	TUTORIAL – 1	1	19/12/17		TLM3	CO1	---	
14.	Assignment/Quiz-1	1	20/12/17		TLM6	CO1	---	
No. of classes required to complete UNIT-I		14	No. of classes taken:					

UNIT-II: XML & JAVA BEANS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	XML Fundamentals	1	21/12/17		TLM1, TLM5	CO2	T1, R1	
16.	Anatomy of Basic XML program	1	22/12/17		TLM1, TLM5	CO2	T1, R1	
17.	Well-formed ness and Validity of XML	1	26/12/17		TLM1, TLM5	CO2	T1, R1	
18.	Document type definition(DTD) with examples	1	27/12/17		TLM1, TLM5	CO2	T1, R1	
19.	XML Schema with examples	1	28/12/17		TLM1, TLM5	CO2	T1, R1	
20.	Document Object model (DOM)	1	29/01/18		TLM1, TLM5	CO2	T1, R1	
21.	Using XML Processors: DOM and SAX	1	2/01/18		TLM1, TLM5	CO2	T1, R1	

22.	Java Beans : Introduction to Java Beans	1	3/01/18		TLM1, TLM5	CO2	T1, R1	
23.	Java Beans API	1	4/01/18		TLM1, TLM5	CO2	T1, R1	
24.	EJB's and its types	1	5/01/18		TLM1, TLM5	CO2	T1, R1	
25.	BDK with example programs	1	9/01/18		TLM1, TLM5	CO2	T1, R1	
26.	TUTORIAL-2	1	10/01/18		TLM3	CO2	---	
27.	Assignment/Quiz-2	1	11/01/18		TLM6	CO2	---	
No. of classes required to complete UNIT-II		13	No. of classes taken:					

UNIT-III: SERVLETS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	Introduction to Web Servers and Servlets	1	16/01/18		TLM1, TLM5	CO3	T1, R2	
29.	Lifecycle of a Servlet with example	1	17/01/18		TLM1, TLM5	CO3	T1, R2	
30.	The Servlet API, javax.servlet and javax.servlet.http packages	1	18/01/18		TLM1, TLM5	CO3	T1, R2	
31.	ServletConfig and ServletContext interfaces with example programs	1	19/01/18		TLM1, TLM5	CO3	T1, R2	
32.	RequestDispatcher Interface usage	1	23/01/18		TLM1, TLM5	CO3	T1, R2	
33.	Database interaction through Servlet Pages	1	24/01/18		TLM1, TLM5	CO3	T1, R2	
34.	Insertion, deletion and searching operations on database through servlet pages	1	25/01/18		TLM1, TLM5	CO3	T1, R2	
35.	Dynamic web application example	1	30/01/18		TLM1, TLM5	CO3	T1, R2	
36.	Http Request & Responses	1	31/01/18		TLM1, TLM5	CO3	T1, R2	
37.	Session Tracking with example program	1	1/02/18		TLM1, TLM5	CO3	T1, R2	
38.	Cookies concept with example program	1	2/02/18		TLM1, TLM5	CO3	T1, R2	
39.	TUTORIAL-3	1	6/02/18		TLM3	CO3	---	
40.	Assignment/Quiz-3	1	7/02/18		TLM6	CO3	---	
No. of classes required to complete UNIT-III		13	No. of classes taken:					

UNIT-IV: JSP

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
41.	Introduction to JSP	1	8/02/18		TLM1, TLM5	CO4	T1, R2	
42.	Components of JSP and its life cycle	1	9/02/18		TLM1, TLM5	CO4	T1, R2	
43.	Scripting elements of JSP	1	13/02/18		TLM1, TLM5	CO4	T1, R2	
44.	JSP Implicit Objects	1	14/02/18		TLM1, TLM5	CO4	T1, R2	
45.	JSP Implicit Objects	1	15/02/18		TLM1, TLM5	CO4	T1, R2	

46.	Conditional Processing – Displaying Values in JSP	1	16/02/18		TLM1, TLM5	CO4	T1, R2
47.	JSP Directive elements	1	20/02/18		TLM1, TLM5	CO4	T1, R2
48.	Action elements in JSP	1	21/02/18		TLM1, TLM5	CO4	T1, R2
49.	Declaring Variables and Methods, Error Handling and Debugging	1	22/02/18		TLM1, TLM5	CO4	T1, R2
50.	Accessing Database through JSP pages, Simple JSP application	1	23/02/18		TLM1, TLM5	CO4	T1, R2
51.	TUTORIAL-4	1	27/02/18		TLM3	CO4	---
52.	Assignment/Quiz-4	1	1/03/18		TLM6	CO4	---
No. of classes required to complete UNIT-IV		12	No. of classes taken:				

UNIT-V: Swings & Struts Framework

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
53.	Introducing Swing , key features of swings.	1	6/03/18		TLM1, TLM5	CO5	T2, R1	
54.	Limitations of AWT, Components & containers	1	7/03/18		TLM1, TLM5	CO5	T2, R1	
55.	JApplet , JFrame and JComponent	1	8/03/18		TLM1, TLM5	CO5	T2, R1	
56.	Labels, text fields, buttons	1	9/03/18		TLM1, TLM5	CO5	T2, R1	
57.	Tabbed Panes, Scroll Panes, Trees	1	13/03/18		TLM1, TLM5	CO5	T2, R1	
58.	Introduction to Struts	1	14/03/18		TLM1, TLM5	CO5	T2, R1	
59.	Overview of MVC Design Pattern	1	15/03/18		TLM1, TLM5	CO5	T2, R1	
60.	Struts Controller components	1	16/03/18		TLM1, TLM5	CO5	T2, R1	
61.	Struts example programs	1	20/03/18		TLM1, TLM5	CO5	T2, R1	
62.	TUTORIAL-5	1	21/03/18		TLM3	CO5	---	
63.	Assignment/Quiz-5	1	22/03/18		TLM6	CO5	---	
No. of classes required to complete UNIT-V		11	No. of classes taken:					

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
64.	JDBC Introduction	1	23/03/18		TLM1, TLM5	CO3, CO4	T1, R2	
65.	java.sql.* package explanation	1	27/03/18		TLM1, TLM5	CO3, CO4	T1, R2	

Teaching Learning Methods

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

Course Instructor

Course Coordinator

Module Coordinator

HOD

COURSE HANDOUT

PROGRAM : B.Tech, VI-Sem., CSE
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : Compiler design - S163
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : Mr. L V Krishna Rao
COURSE COORDINATOR : Dr. D. Veeraiah
PRE-REQUISITE: knowledge in Theory of Computation

COURSE OBJECTIVE: To introduce the major concept areas of language translation and compiler design and enrich the knowledge in various phases of compiler and its use, code optimization techniques, machine code generation, and use of symbol table. To provide practical programming skills necessary for constructing a compiler.

COURSE OUTCOMES (CO)

CO1: Design and implement lexical analyzer using LEX tool.

CO2: Apply context-free grammar and PDA design concepts to design parsers.

CO3: Design and implement Bottom-Up parser using YACC.

CO4: Create frameworks for syntax directed translation schemes, type checking and intermediate code generation.

CO5: Analyze various code optimization techniques and code generation.

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

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

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

BOS APPROVED TEXT BOOKS:

T1 Alfred V.Aho, Jeffrey D.Ullman, Ravi sethi "Compilers Principles, Techniques and Tools", Pearson Education, 2nd Edition, 2008.

BOS APPROVED REFERENCE BOOKS:

R1 Parag H.Dave, HimanshuB.Dave “Compilers Principles and Practice” Person Education, First Edition, 2012.

R2 Andrew W.appel “Modern compiler implementation in C” Cambridge, Revised Edition, 2010.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A**UNIT-I: OVERVIEW OF COMPILATION**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Subject	1	27/11/17		TLM1	-	T1	
2.	Course Outcomes	1	29/11/17		TLM1	CO1	-	
3.	Phases of Compilation	1	30/11/17		TLM1	CO1	T1	
4.	Introduction to Lexical Analysis	1	1/12/17		TLM1	CO1	T1	
5.	Lexical Analysis – input buffering	1	4/12/17		TLM1,TLM4	CO1	T1,R1	
6.	Lexical Analysis – Finite Automata	1	6/12/17		TLM1,TLM4	CO1	T1,R1	
7.	Lexical Analysis – Finite Automata	1	7/12/17		TLM1,TLM4	CO1	T1,R1	
8.	TUTORIAL-1	1	8/12/17		TLM3	CO1	-	
9.	Lexical Analysis – Regular expressions	1	11/12/17		TLM1,TLM4	CO1	T1	
10.	Pass & Phase, Interpretation, Bootstrapping	1	13/12/17		TLM1	CO1	T1	
11.	Data Structures in Compilation	1	14/12/17		TLM1	CO1	T1	
12.	LEX	1	15/12/17		TLM1,TLM5	CO1	T1,R1	
13.	TUTORIAL-2	1	18/12/17		TLM3	CO1	-	
14.	Assignment/Quiz-1	1	20/12/17		TLM6	CO1	-	
No. of classes required to complete UNIT-I		14			No. of classes taken:			

UNIT-II: Context Free Grammars & Top down Parsing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	Context Free Grammars	1	21/12/17		TLM1	CO2	T1	
16.	Derivation & Parse Trees	1	22/12/17		TLM1,TLM4	CO2	T1	
17.	Ambiguity, Elimination of Ambiguity	1	27/12/17		TLM1,TLM4	CO2	T1	
18.	Top down Parsing	1	28/12/17		TLM1,TLM4	CO2	T1,R1	
19.	Back Tracking	1	29/12/17		TLM1,TLM4	CO2	T1	
20.	Recursive Descent Parsing	1	1/01/18		TLM1,TLM4	CO2	T1,R1	

21.	TUTORIAL-3	1	3/01/18		TLM3	CO2	-	
22.	Pre-processing Steps required for PP	1	4/01/18		TLM1	CO2	T1	
23.	First & Follow	1	5/01/18		TLM1,TLM4	CO2	T1,R1,R2	
24.	Predictive Parsing	1	8/01/18		TLM1,TLM4	CO2	T1,R2	
25.	LL(1)	1	10/01/18		TLM1,TLM4	CO2	T1,R2	
26.	TUTORIAL-4	1	11/01/18		TLM3	CO2	-	
27.	Assignment/Quiz-3	1	12/01/18		TLM6	CO2	-	
No. of classes required to complete UNIT-II		13			No. of classes taken:			

UNIT-III: Bottom up Parsing

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	Introduction	1	15/01/18		TLM1	CO3	T1	
29.	Shift Reduce Parsing	1	22/01/18		TLM1,TLM4	CO3	T1	
30.	LR parsing	1	24/01/18		TLM1,TLM4	CO3	T1,R1	
31.	SLR	2	25/01/18& 29/01/18		TLM1,TLM4	CO3	T1,R1	
32.	TUTORIAL-5	1	31/01/18		TLM3	CO3	-	
33.	CLR	2	01/02/18		TLM1,TLM4	CO3	T1,R1	
34.	LALR	1	02/02/18		TLM1,TLM4	CO3	T1,R1	
35.	Error recovery in parsing	1	05/02/18		TLM1,TLM4	CO3	T1,R1	
36.	Handling Ambiguous grammar	1	07/02/18		TLM1,TLM4	CO3	T1	
37.	YACC	1	08/02/18		TLM1,TLM4	CO3	T1,R1	
38.	TUTORIAL-6	1	09/02/18		TLM3	CO3	-	
39.	Assignment/Quiz-3	1	12/02/18		TLM6	CO3	-	
No. of classes required to complete UNIT-III		14			No. of classes taken:			

UNIT-IV: Semantic Analysis & Run time Storage

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
40.	Syntax directed Translation	1	14/02/18		TLM1	CO4	T1	
41.	S-attributed and L-attributed grammars	1	15/02/18		TLM1,TLM4	CO4	T1,R1	
42.	Type checker	1	16/02/18		TLM1	CO4	T1	
43.	Intermediate code – abstract syntax tree, polish notation, Three address codes	1	19/02/18		TLM1,TLM4	CO4	T1,R1	

44.	Three address codes	1	21/02/18		TLM1,TLM4	CO4	T1,R1	
45.	Tutorial-7	1	22/02/18		TLM3	CO4	-	
46.	Translation of simple statements and control flow statements	1	23/02/18		TLM1,TLM4	CO4	T1	
47.	Run time storage: Storage Organization	1	26/02/18		TLM1	CO4	T1	
48.	Storage allocation strategies	1	28/02/18		TLM1	CO4	T1	
49.	Scope access to local names, parameters	1	1/03/18		TLM1	CO4	T1	
50.	Language facilities for dynamics storage allocation	1	2/03/18		TLM1	CO4	T1	
51.	Tutorial-8	1	5/03/18		TLM3	CO4	-	
52.	Assignment/Quiz-4	1	07/03/18		TLM6	CO4	-	
No. of classes required to complete UNIT-IV		13			No. of classes taken:			

UNIT-V: Code Optimization & Code Generation

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
53.	Code Optimization: Introduction	1	08/03/18		TLM1	CO5	T1	
54.	Principle sources of optimization	1	9/03/18		TLM1	CO5	T1,R1	
55.	Scope, Local & Loop optimization	1	12/03/18		TLM1	CO5	T1,R1	
56.	DAG representation of basic block	1	14/03/18		TLM1,TLM4	CO5	T1,R2	
57.	Code generation: Introduction	1	15/03/18		TLM1	CO5	T1	
58.	TUTORIAL-9	1	16/03/18		TLM3	CO5	-	
59.	Object code forms	1	19/03/18		TLM1	CO5	T1	
60.	Generic code generation algorithm	1	21/03/18		TLM1	CO5	T1	
61.	Register allocation & assignment	1	22/03/18		TLM1,TLM4	CO5	T1	
62.	Peephole optimization	1	23/03/18		TLM1,TLM4	CO5	T1	
63.	TUTORIAL-10	1	26/03/18		TLM3	CO5	-	
64.	Assignment/Quiz-5	1	28/03/18		TLM6	CO5	-	
No. of classes required to complete UNIT-V		12			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
65.	Static Single Assignment	1	29/03/18		TLM1,TLM4		T1	
66.	Use Of Compiler In Computer Architecture	2	31/03/13		TLM1,TLM4		T1	

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

Course Instructor

Course Coordinator

Module Coordinator

HOD

CO1	1	1	2	-	-	-	-	-	-	-	-	-	-	3	-
CO2	3	3	-	-	1	-	-	-	-	-	-	-	2	3	-
CO3	3	2	-	-	-	-	-	-	-	-	-	-	2	3	-
CO4	2	1	2	-	-	-	-	-	-	-	-	-	1	3	-
CO5	2	1	2	-	-	-	-	-	-	-	-	-	1	3	-

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

BOS APPROVED TEXT BOOKS:

T1 Elaine Rich, Kevin Knight and ShivashankarB.Nair, “Artificial Intelligence”, TMH, Third edition, 2009.

T2 Stuart J. Russell and Peter Norvig, "Artificial Intelligence: A Modern Approach", Pearson Education Asia, Second edition, 2003.

BOS APPROVED REFERENCE BOOKS:

R1 Rajendra Akerkar, “Introduction to Artificial Intelligence”, PHI, 2005.

R2 Patrick Henry Winston, “Artificial Intelligence”, Pearson Education Inc., Third edition, 2001.

R3 Eugene Charniak and Drew Mc Dermott, “Introduction to Artificial Intelligence”, Addison-Wesley, ISE Reprint, 1998.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT -I: Introduction of Artificial Intelligence

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction of AI	1	28-11-17		TLM1	CO1	T1,T2,R1	
2.	History of AI	1	29-11-17		TLM1	CO1	T1,T2,R1	
3.	Intelligent agents	1	01-12-17		TLM1	CO1	T1,T2,R1	
4.	Structure of agents and its functions	1	02-12-17		TLM1	CO1	T1,T2,R1	
5.	Problem spaces and search	1	05-12-17		TLM1	CO1	T1,T2,R1	
6.	Problem spaces and search	1	06-12-17		TLM1	CO1	T1,T2,R1	
7.	Heuristic Search Techniques	1	08-12-17		TLM1	CO1	T1,T2,R1	
8.	Best-first search	1	12-12-17		TLM1	CO1	T1,T2,R1	
9.	Problem reduction	1	13-12-17		TLM1	CO1	T1,T2,R1	

10.	Constraint satisfaction	1	15-12-17		TLM1	CO1	T1,T2,R1	
11.	Means Ends Analysis.	1	16-12-17		TLM1	CO1	T1,T2,R1	
12.	Overview/Revision of UNIT-1	1	19-12-17		TLM1	CO1	T1,T2,R1	
13.	Tutorial – I	1	20-12-17		TLM1			
No. of classes required to complete UNIT-I		13			No. of classes taken:			

UNIT –II: Knowledge Representation

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
14.	Introduction to Knowledge Representation	1	22-12-17					
15.	Approaches and issues in knowledge representation	1	23-12-17		TLM1	CO2	T1,T2,R1	
16.	Knowledge - Based Agent	1	26-12-17		TLM1	CO2	T1,T2,R1	
17.	Propositional Logic	1	27-12-17		TLM1	CO2	T1,T2,R1	
18.	Predicate logic	1	29-12-17		TLM1	CO2	T1,T2,R1	
19.	Unification	1	30-12-17		TLM1	CO2	T1,T2,R1	
20.	Resolution	1	02-01-18		TLM1	CO2	T1,T2,R1	
21.	Weak slot – filler structure	1	03-01-18		TLM1	CO2	T1,T2,R1	
22.	Strong slot - filler structure.	1	05-01-18		TLM1	CO2	T1,T2,R1	
23.	Overview/Revision of UNIT-2	1	06-01-18		TLM1	CO2	T1,T2,R1	
24.	Tutorial – II	1	09-01-18		TLM1			
No. of classes required to complete UNIT-2		11			No. of classes taken:			

UNIT –III: Reasoning under uncertainty

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
25.	Introduction of Reasoning under Uncertainty	1	10-01-18		TLM1	CO3	T1,T2,R1	
26.	Logics of non-monotonic reasoning	1	12-01-18		TLM1	CO3	T1,T2,R1	
27.	Implementation- Basic probability notation	1	23-01-18		TLM1	CO3	T1,T2,R1	
28.	Bayes rule	1	24-01-18		TLM1	CO3	T1,T2,R1	
29.	Certainty factors and rule based systems	1	27-01-18		TLM1	CO3	T1,T2,R1	

30.	Certainty factors and rule based systems	1	30-01-18		TLM1	CO3	T1,T2,R1	
31.	Bayesian networks	1	31-01-18		TLM1	CO3	T1,T2,R1	
32.	Dempster Shafer Theory	1	02-02-18		TLM1	CO3	T1,T2,R1	
33.	Fuzzy Logic	1	03-02-18		TLM1	CO3	T1,T2,R1	
34.	Overview/Revision of UNIT-3	1	06-02-18		TLM1	CO3	T1,T2,R1	
35.	Tutorial – III	1	07-02-18		TLM1			
No. of classes required to complete UNIT-3		11			No. of classes taken:			

UNIT –IV: Planning and Learning

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
36.	Planning with state space search	1	09-02-18		TLM1	CO4	T1,T2,R1	
37.	conditional planning-	1	13-02-18		TLM1	CO4	T1,T2,R1	
38.	continuous planning	1	14-02-18		TLM1	CO4	T1,T2,R1	
39.	Multi-Agent planning	1	16-02-18		TLM1	CO4	T1,T2,R1	
40.	Forms of learning	1	17-02-18		TLM1	CO4	T1,T2,R1	
41.	inductive learning	1	20-02-18		TLM1	CO4	T1,T2,R1	
42.	Reinforcement Learning	1	21-02-18		TLM3	CO4	T1,T2,R1	
43.	learning decision trees	1	23-02-18		TLM1	CO4	T1,T2,R1	
44.	Neural Net learning and Genetic learning	1	24-02-18		TLM1	CO4	T1,T2,R1	
45.	Neural Net learning and Genetic learning	1	27-02-18		TLM1	CO4	T1,T2,R1	
46.	Overview/Revision of UNIT-4	1	28-02-18		TLM1	CO4	T1,T2,R1	
47.	Tutorial – IV	1	02-03-18		TLM1			
No. of classes required to complete UNIT-4		12			No. of classes taken:			

UNIT-V: Advanced Topics:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
48.	Game Playing: Minimax search procedure	1	03-03-18		TLM1	CO5	T1,T2,R1	
49.	Adding alpha-beta cutoffs.	1	06-03-18		TLM1	CO5	T1,T2,R1	

50.	Expert System: Representation	1	07-03-18		TLM1	CO5	T1,T2,R1
51.	Expert System shells - Knowledge Acquisition	1	09-03-18		TLM1	CO5	T1,T2,R1
52.	Robotics: Hardware	1	13-03-18		TLM1	CO5	T1,T2,R1
53.	Robotic Perception – Planning - Application domains.	1	14-03-18		TLM1	CO5	T1,T2,R1
54.	Swarm Intelligent Systems – Ant Colony System	1	16-03-18		TLM1	CO5	T1,T2,R1
55.	Development of Ant Colony System	1	17-03-18		TLM1	CO5	T1,T2,R1
56.	Application and Working of Ant Colony System.	1	20-03-18		TLM1	CO5	T1,T2,R1
57.	Overview/Revision of UNIT-5	1	21-03-18		TLM1	CO5	T1,T2,R1
58.	Tutorial – V	1	23-03-18		TLM3		
No. of classes required to complete UNIT-5		11			No. of classes taken:		

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
59.	How AI and NN were related	1	24-03-18		TLM1	CO1-CO5	T1,T2,R1	
60.	How AI and NN were related	1	27-03-18		TLM1	CO1-CO5	T1,T2,R1	

Teaching Learning Methods

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

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

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

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

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

PROGRAMME OUTCOMES (POs)

Engineering Graduates will be able to:

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

the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the **engineering and management principles and apply these to one's own work, as a member and leader** in a team, to manage projects and in multidisciplinary environments.

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

PSOs

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

Dr.K.Venkateswara Rao	Dr.P.M.Ashok		
Course Instructor	Course Coordinator	Module Coordinator	HOD

COURSE HANDOUT

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

ACADEMIC YEAR : 2017-18

COURSE NAME & CODE : Distributed Operating System

L-T-P STRUCTURE : 3-1-2

COURSE CREDITS : 3

COURSE INSTRUCTOR : DIVVELA SRINIVASA RAO

COURSE COORDINATOR :

PRE-REQUISITE: Knowledge of Operating systems, Computer Networks.

COURSE OBJECTIVE:

This course enables the students to know about

A comprehensive introduction to understand the underlying principles, techniques and approaches which constitute a coherent body of knowledge in operating systems. In particular, the course will consider inherent functionality and processing of program execution. The emphasis of the course will be placed on understanding how the various elements that underlie operating system interact and provides services for execution of application software.

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

CO1: Identify the hardware and software concepts to design the communication model in Distributed System.

CO2: Evaluate the implementation of process, thread, file systems and processors in Distributed system.

CO3: Analyze Clock Synchronization protocols in Distributed system as well as Deadlock handling mechanism.

CO4: Compare Shared memory Multiprocessors used in Distributed System.

CO5: Examine the case study of CHROUS, MACH distributed operating systems.

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

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

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

BOS APPROVED TEXT BOOKS:

T1 Andrew S Tanenbaum, Distributed Operating Systems, Pearson Education, 1995.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B

UNIT -I: Introduction to Distributed Systems, Communication

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Distributed systems Introduction	1	27-11-17		TLM1	CO1	T1,T2,R1	
2.	Its goals	1	29-11-17		TLM1	CO1	T1,T2,R1	
3.	hardware concepts	1	01-12-17		TLM1	CO1	T1,T2,R1	
4.	software concepts	1	06-12-17		TLM1	CO1	T1,T2,R1	
5.	design issues	1	07-12-17		TLM1	CO1	T1,T2,R1	
6.	design issues	1	08-12-17		TLM1	CO1	T1,T2,R1	
7.	Layered protocols	1	13-12-17		TLM1	CO1	T1,T2,R1	
8.	ATM Networks	1	14-12-17		TLM1	CO1	T1,T2,R1	
9.	Client Server model	1	15-12-17		TLM1	CO1	T1,T2,R1	
10.	RPC	1	19-12-17		TLM1	CO1	T1,T2,R1	
11.	Group communication	1	20-12-17		TLM1	CO1	T1,T2,R1	
No. of classes required to		11			No. of classes taken:			

complete UNIT-I				
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UNIT –II: Process and Processors, Distributed File System

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
12.	Threads, system models	1	21-12-17					
13.	processor allocation	1	22-12-17		TLM1	CO2	T1,T2,R1	
14.	Scheduling	1	23-12-17		TLM1	CO2	T1,T2,R1	
15.	Fault Tolerance	1	27-12-17		TLM1	CO2	T1,T2,R1	
16.	Real Time Distributed Systems.	1	28-12-17		TLM1	CO2	T1,T2,R1	
17.	File system design	1	29-12-17		TLM1	CO2	T1,T2,R1	
18.	File system implementation	1	30-12-17		TLM1	CO2	T1,T2,R1	
19.	Trends in Distributed File Systems	1	03-01-18		TLM1	CO2	T1,T2,R1	
20.	Tutorial – I	1	04-01-18		TLM3	CO1	T1,T2,R1	
21.	Tutorial – II	1	05-01-18		TLM3	CO2	T1,T2,R1	
No. of classes required to complete UNIT-2		10			No. of classes taken:			

UNIT –III: Clock Synchronization

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
22.	Clock synchronization Introduction	1	06-01-18		TLM1	CO3	T1,T2,R1	
23.	Clock synchronization Introduction	1	09-01-18		TLM1	CO3	T1,T2,R1	
24.	Clock synchronization Introduction	1	10-01-18		TLM1	CO3	T1,T2,R1	
25.	Mutual Exclusion	1	11-01-18		TLM1	CO3	T1,T2,R1	
26.	Mutual Exclusion	1	24-01-18		TLM1	CO3	T1,T2,R1	
27.	Mutual Exclusion	1	25-01-18		TLM1	CO3	T1,T2,R1	
28.	Election Algorithms	1	27-01-18		TLM1	CO3	T1,T2,R1	
29.	Atomic Transactions	1	01-02-18		TLM1	CO3	T1,T2,R1	
30.	Atomic Transactions	1	02-02-18		TLM1	CO3	T1,T2,R1	
31.	Deadlocks.	1	03-02-18		TLM1	CO3	T1,T2,R1	
32.	Deadlocks.	1	07-02-18		TLM1	CO3	T1,T2,R1	

33.	Tutorial – III	1	08-02-18		TLM3	CO3	T1,T2,R1	
No. of classes required to complete UNIT-3		10			No. of classes taken:			

UNIT –IV: Distributed Shared Memory

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
34.	Introduction to Distributed Shared Memory	1	09-02-18		TLM1	CO4	T1,T2,R1	
35.	Bus based multiprocessors	1	14-02-18		TLM1	CO4	T1,T2,R1	
36.	Bus based multiprocessors	1	15-02-18		TLM1	CO4	T1,T2,R1	
37.	Ring based multiprocessors	1	16-02-18		TLM1	CO4	T1,T2,R1	
38.	Ring based multiprocessors	1	17-02-18		TLM1	CO4	T1,T2,R1	
39.	Switched multiprocessors	1	21-02-18		TLM1	CO4	T1,T2,R1	
40.	Switched multiprocessors	1	22-02-18		TLM1	CO4	T1,T2,R1	
41.	NUMA multiprocessors	1	23-02-18		TLM1	CO4	T1,T2,R1	
42.	NUMA multiprocessors	1	24-02-18		TLM1	CO4	T1,T2,R1	
43.	Comparison of Shared Memory Systems.	1	28-02-18		TLM1	CO4	T1,T2,R1	
44.	Tutorial – IV	1	01-03-18		TLM3	CO4	T1,T2,R1	
No. of classes required to complete UNIT-4		10			No. of classes taken:			

UNIT-V: CASE Studies:

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
45.	MACH OS Introduction	1	02-03-18		TLM1	CO5	T1,T2,R1	
46.	Internal topics of MACH OS	1	03-03-18		TLM1	CO5	T1,T2,R1	
47.	Internal topics of MACH OS	1	07-03-18		TLM1	CO5	T1,T2,R1	
48.	CHORUS OS Introduction	1	18-03-18		TLM1	CO5	T1,T2,R1	
49.	Internal topics of CHORUS OS	1	19-03-18		TLM1	CO5	T1,T2,R1	
50.	Internal topics of CHORUS OS	1	20-03-18		TLM1	CO5	T1,T2,R1	
51.	MACH OS Introduction	1	21-03-18		TLM1	CO5	T1,T2,R1	
52.	Internal topics of MACH OS	1	25-03-18		TLM1	CO5	T1,T2,R1	
53.	Internal topics of MACH OS	1	26-03-18		TLM1	CO5	T1,T2,R1	

54.	Tutorial – V	1	27-03-18		TLM3	CO5	T1,T2,R1	
No. of classes required to complete UNIT-5		10			No. of classes taken:			

Contents beyond the Syllabus

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

Teaching Learning Methods

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

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

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

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

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

PROGRAMME OUTCOMES (POs)

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess social, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in social and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
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9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
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11. **Project management and finance:** Demonstrate knowledge and understanding of the **engineering and management principles and apply these to one's own work, as a member and leader** in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to

engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes:

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

D.Srinivasa Rao			
Course Instructor	Course Coordinator	Module Coordinator	HOD

COURSE HANDOUT

PROGRAM : B.Tech., VI-Sem., CSE
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : Information Security - S272
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : Dr. K. S. M. V. Kumar
COURSE COORDINATOR : Dr. K. S. M. V. Kumar
PRE-REQUISITE: Knowledge of security issues in using a network

COURSE OBJECTIVE : This course provides the knowledge to understand the basic concept of Cryptography and Network Security , types of ciphers and various symmetric and assymmetric algorithms. Also provides the knowledge on digital signatures , viruses , intruders and firewalls.

COURSE OUTCOMES (COs)

CO1: Demonstrate the use of encryption algorithm for acheiving data confidentiality

CO2: Apply Secure hash functions for attaining data integrity

CO3: Analyze the security mechanisms for acheiving authentication

CO4: Analyze the protocols for acheiving availability,access control to resources and protocols for non-repudiation

CO5: Explore the threats and remedial measures for system security

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

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

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

BOS APPROVED TEXT BOOKS:

T1 William Stallings, Network Security Essentials (Applications and Standards), Pearson Education.

BOS APPROVED REFERENCE BOOKS:

R1 Stallings, Cryptography and Network Security, PHI/Pearson, Third edition

R2 Whitman, Principles of Information Security, Thomson

R3 Robert Bragg, Mark Rhodes, Network Security: The complete reference, TMH

R4 Buchmann, Springer Introduction to Cryptography.

COURSE DELIVERY PLAN (LESSON PLAN): Section-A**UNIT-I**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction to Network Security	1	27.11.17		TLM1	CO1	T1	
2.	Security Attacks	1	28.11.17		TLM1/ TLM2	CO1	T1	
3.	Security Services and Mechanisms Model for Internetwork security	1	30.11.17		TLM1/ TLM2	CO1	T1	
4.	Internet Standards and RFCs Conventional Encryption Principles	1	05.12.17		TLM1/ TLM2	CO1	T1	
5.	Conventional Encryption Algorithms - DES	2	07.12.17		TLM1/ TLM2	CO1	T1	
6.	Conventional Encryption Algorithms - Triple DES	1	09.12.17		TLM1/ TLM2	CO1	T1	
7.	ASSIGNMENT / QUIZ -1	1	11.12.17		TLM6	CO1		
8.	Cipher Block Modes of Operations	2	12.12.17		TLM1/ TLM2	CO1	T1	
9.	Location of Encryption Devices	1	14.12.17		TLM1	CO1	T1	
10.	Key Distribution	1	16.12.17		TLM1/ TLM2	CO1	T1	
11.	Approaches of Message Authentication	1	18.12.17		TLM1/ TLM2	CO1	T1	
12.	Secure Hash Functions	1	19.12.17		TLM1/ TLM2	CO1	T1	
13.	SHA – ALGORITHM	1	21.12.17		TLM1/ TLM2	CO1	T1	
14.	HMAC ALGORITHM	1	23.12.17		TLM1/ TLM2	CO1	T1	
15.	TUTORIAL	1	25.12.17		TLM3	CO1		
No. of classes required to complete UNIT-I		17			No. of classes taken:			

UNIT-II

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
16.	Public Key Cryptography principles	1	26.12.17		TLM1/ TLM2	CO2	T1	
17.	Public Key Cryptography Algorithms	2	28.12.18		TLM1/ TLM2	CO2	T1	
18.	Digital Signatures Digital Certificates	1	30.12.18		TLM1/ TLM2	CO2	T1	
19.	Certificate Authority	1	01.01.18		TLM1/ TLM2	CO2	T1	
20.	ASSIGNMENT / QUIZ	1	02.01.18		TLM6	CO2	T1	
21.	Key Management	1	04.01.18		TLM1/ TLM2	CO2	T1	
22.	Kerberos	1	06.01.18		TLM1/ TLM2	CO2	T1	
23.	X.509 Directory	2	08.01.18		TLM1/ TLM2	CO2	T1	
24.	Authemtication Service	1	09.01.18		TLM1/ TLM2	CO2	T1	
25.	TUTORIAL	1	11.01.18		TLM3	CO2	T1	
No. of classes required to complete UNIT-II		12			No. of classes taken:			

UNIT-III

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
26.	Pretty Good Privacy (PGP)	1	13.01.18		TLM1/ TLM2	CO3	T1	
27.	PGP - Messages	1	25.01.18		TLM1/ TLM2	CO3	T1	
28.	S/MIME introduction	1	27.01.18		TLM1/ TLM2	CO3	T1	
29.	S/MIME Content Types & Transfer Encodings	1	29.01.18		TLM1/ TLM2	CO3	T1	
30.	S/MIME Functionality & Messages	1	30.01.18		TLM1/ TLM2	CO3	T1	
31.	ASSIGNMENT / QUIZ	1	01.02.18		TLM6	CO3	T1	
32.	IP Security Architecture	1	03.02.18		TLM1/ TLM2	CO3	T1	

33.	Authentication Header	1	05.02.18		TLM1/ TLM2	CO3	T1	
34.	Encapsulating Security Payload	1	06.02.18		TLM1/ TLM2	CO3	T1	
35.	Combining Security Associations	1	08.02.18		TLM1/ TLM2	CO3	T1	
36.	TUTORIAL	1	10.02.18		TLM3	CO3	T1	
No. of classes required to complete UNIT-III		11			No. of classes taken:			

UNIT-IV

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
37.	Web Security Requirements	1	12.02.18		TLM1/ TLM2	CO4	T1	
38.	Secure Socket Layer (SSL)	1	13.02.18		TLM1/ TLM2	CO4	T1	
39.	SSL Record Protocol	1	15.02.18		TLM1/ TLM2	CO4	T1	
40.	Change Cipher Spec Protocol Alert Protocol	1	17.02.18		TLM1/ TLM2	CO4	T1	
41.	SSL Handshake Protocol	1	19.02.18		TLM1/ TLM2	CO4	T1	
42.	Transport Layer Security	1	20.02.18		TLM1/ TLM2	CO4	T1	
43.	ASSIGNMENT / QUIZ	1	22.02.18		TLM6	CO4	T1	
44.	SET Requirements & Features	1	24.02.18		TLM1/ TLM2	CO4	T1	
45.	SET Participants & Sequence of events	1	26.02.18		TLM1/ TLM2	CO4	T1	
46.	Construction of Dual Signature & SET Transaction Types	1	27.02.18		TLM1/ TLM2	CO4	T1	
47.	Purchase Request by Cardholder	1	01.03.18		TLM1/ TLM2	CO4	T1	
48.	Customer Purchase Request Verification by Merchant	1	03.03.18		TLM1/ TLM2	CO4	T1	
49.	TUTORIAL	1	05.03.18		TLM3	CO4	T1	
No. of classes required to complete UNIT-IV		13			No. of classes taken:			

UNIT-V

S.No.	Topics to be covered	No. of Classes	Tentative Date of	Actual Date of	Teaching Learning	Learning Outcome	Text Book	HOD Sign
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		Required	Completion	Completion	Methods	COs	followed	Weekly
50.	Intruders	1	06.03.18		TLM1	CO5	T1	
51.	Viruses and Related Threats	1	08.03.18		TLM1/ TLM2	CO5	T1	
52.	Virus Countermeasures	1	10.03.18		TLM1/ TLM2	CO5	T1	
53.	ASSIGNMENT / QUIZ	1	12.03.18		TLM6	CO5	T1	
54.	Firewall Characteristics	1	13.03.18		TLM1	CO5	T1	
55.	Types of Firewalls	1	15.03.18		TLM1/ TLM2	CO5	T1	
56.	Trusted System	1	17.03.18		TLM1/ TLM2	CO5	T1	
57.	Introduction to Database Security and authorization	1	19.03.18		TLM1/ TLM2	CO5	T1	
58.	TUTORIAL	1	20.03.18		TLM3	CO5	T1	
59.	REVISION	1	22.03.18		TLM1/ TLM2	CO5	T1	
No. of classes required to complete UNIT-V		10			No. of classes taken:			

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
60.	Substitution & Transposition Techniques	1	24.03.18		TLM1	CO1	R1	
61.	Fermat's & Eluers Theorem	1	26.03.18		TLM1	CO2	R1	
62.	Chinese Remainder Theorem	1	27.03.18		TLM1	CO2	R1	

Teaching Learning Methods

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

ACADEMIC CALENDAR:

Description	From	To	Weeks
I Phase of Instructions-1	27-11-2017	13-01-2018	7
Sankranthi Holidays			
I Phase of Instructions-II			
I Mid Examinations	16-01-2018	20.01.2018	1
II Phase of Instructions	22-01-2018	31-03-2018	9
II Mid Examinations	02-04-2018	07-04-2018	1
Preparation and Practicals	09-04-2018	21-04-2018	2
Semester End Examinations	23-04-2018	05-05-2018	2

EVALUATION PROCESS:

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

Course Instructor

Course Coordinator

Module Coordinator

HOD

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (A)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(Autonomous & Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi,

NAAC Accredited with 'A' grade, Certified by ISO 9001:2015)

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

COURSE HANDOUT

PROGRAM	: B.Tech., VI-Sem., CSE
ACADEMIC YEAR	: 2017-18
COURSE NAME & CODE	: UML Design - S 415
L-T-P STRUCTURE	: 3-1-0
COURSE CREDITS	: 3
COURSE INSTRUCTOR	: Sk. Johny Basha
COURSE COORDINATOR	: Dr. Ch. Venkata Narayana Reddy
PRE-REQUISITE:	Knowledge of Object Oriented Methods

COURSE OBJECTIVE:

The main objective of this course is that the students become familiar with all phases of OOAD and master the main features of the UML. They come to know about the main concepts of Object Technologies and how to apply them at work and develop the ability to analyze and solve challenging problem in various domains. And Learn the Object Design Principles and understand how to apply them towards implementation.

COURSE OUTCOMES (CO):

- CO1:** Select the basic elements of modeling such as Things, Relationships and Diagrams depending on the views of UML Architecture and SDLC.
- CO2:** Apply basic and Advanced Structural Modeling Concepts for designing real time applications.
- CO3:** Design Class and Object Diagrams that represent Static Aspects of a Software System.
- CO4:** Analyze Dynamic Aspects of a Software System using Use Case, Interaction and Activity Diagrams.
- CO5:** Apply techniques of State Chart Diagrams and Implementation Diagrams to model behavioral aspects and Runtime environment of Software Systems

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

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

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

BOS APPROVED TEXT BOOKS:

T1 Grady Booch, James Rumbaugh, Ivar Jacobson “The Unified Modeling Language User Guide, Pearson Education, 2nd edition.

BOS APPROVED REFERENCE BOOKS:

R1 Meilir Page-Jones: Fundamentals of Object Oriented Design in UML, Pearson Education.

R2 Pascal Roques: Modeling Software Systems Using UML2, WILEY- Dreamtech India Pvt. Ltd.

R3 Atul Kahate: Object Oriented Analysis & Design, TMH Companies.

R4 Craig Larman, Applying UML and Patterns: An introduction to Object – Oriented Analysis and Design and Unified Process, Pearson Education.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B**UNIT – 1: INTRODUCTION TO UML**

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Why Modeling? and Importance of Modeling	1	27/11/17		TLM1	CO1	T1	
2.	Principles of Modeling and Object Oriented Modeling	1	28/11/17		TLM1	CO1	T1	
3.	Overview of the UML	1	29/11/17		TLM1	CO1	T1	
4.	Conceptual Model of the UML & Building Blocks: Things – Part 1	1	02/12/17		TLM1, TLM2, TLM8	CO1	T1, R1	
5.	Building Blocks: Things – Part 2	1	04/12/17		TLM1, TLM2, TLM8	CO1	T1, R1	
6.	Relationships with Examples & UML Diagrams	1	05/12/17		TLM1, TLM2, TLM8	CO1	T1, R1	
7.	Rules of the UML & Common Mechanisms in the UML	1	06/12/17		TLM1, TLM2	CO1	T1, R1	
8.	Extensible Mechanisms and Architecture	1	09/12/17		TLM1, TLM2, TLM8	CO1	T1	
9.	Software Development Life Cycle	1	11/12/17		TLM1, TLM2	CO1	T1	
10.	TUTORIAL – 1	1	12/12/17		TLM3	CO1	---	
11.	Assignment / Quiz – 1	1	13/12/17		TLM6	CO1	---	
No. of classes required to complete UNIT-I:		11	No. of classes taken:					

UNIT – 2: BASIC AND ADVANCED STRUCTURAL MODELING

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
12.	Classes	1	16/12/17		TLM1, TLM2	CO2	T1	
13.	Relationships in Class Diagrams	2	18/12/17 19/12/17		TLM1, TLM2	CO2	T1	
14.	Common Mechanisms of Class Diagram	1	20/12/17		TLM1, TLM2	CO2	T1	
15.	Different Diagrams	1	23/12/17		TLM1, TLM2	CO2	T1	
16.	Advanced Classes	2	26/12/17 27/12/17		TLM1, TLM2	CO2	T1, R2	
17.	Advanced Relationships	2	30/12/17 02/01/18		TLM1, TLM2	CO2	T1, R2	
18.	Interfaces	1	03/01/18		TLM1, TLM2	CO2	T1, R2	
19.	Types & Roles	1	06/01/18		TLM1, TLM2	CO2	T1, R2	
20.	Packages	1	08/01/18		TLM1, TLM2	CO2	T1, R2	
21.	Case Study	1	09/01/18		TLM9	CO2	T1	
22.	TUTORIAL – 2	1	10/01/18		TLM3	CO2	---	
23.	Assignment / Quiz – 2	1	13/01/18		TLM6	CO2	---	
No. of classes required to complete UNIT-II:		15	No. of classes taken:					

UNIT – 3: CLASS & OBJECT DIAGRAMS

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
24.	Class Diagrams: Terms & Concepts of Class Diagram	1	22/1/18		TLM1, TLM2	CO3	T1, R2	
25.	Modeling Techniques for Class Diagram	2	23/1/18 24/1/18		TLM1, TLM2, TLM8	CO3	T1, R2	
26.	Case Study	1	27/1/18		TLM9	CO3	T1	
27.	Object Diagrams: Terms & Concepts	1	29/1/18		TLM1, TLM2	CO3	T1, R2	
28.	Modeling Techniques for Object Diagram	1	30/1/18		TLM1, TLM2, TLM8	CO3	T1, R2	
29.	Case Study	1	31/1/18		TLM9	CO3	T1	

30.	TUTORIAL – 3	1	03/02/18		TLM3	CO3	---	
31.	Assignment / Quiz – 3	1	05/02/18		TLM6	CO3	---	
No. of classes required to complete UNIT-III:		9	No. of classes taken:					

UNIT – 4: BASIC BEHAVIORAL MODELING

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
32.	Interactions	2	06/02/18 07/02/18		TLM1, TLM2	CO4	T1	
33.	Interaction Diagrams – Part 1	1	12/02/18		TLM1, TLM2	CO4	T1	
34.	Interaction Diagrams – Part 2	1	14/02/18		TLM1, TLM2, TLM8	CO4	T1	
35.	Use Cases	1	17/02/18		TLM1, TLM2	CO4	T1	
36.	Use Case Diagrams	1	19/02/18		TLM1, TLM2, TLM8	CO4	T1	
37.	Activity Diagrams – Part 1	1	20/02/18		TLM1, TLM2	CO4	T1	
38.	Activity Diagrams – Part 2	1	21/02/18		TLM1, TLM2, TLM8	CO4	T1	
39.	Case Study	1	24/02/18		TLM9	CO4	T1	
40.	TUTORIAL – 4	1	26/02/18		TLM3	CO4	---	
41.	Assignment / Quiz – 4	1	27/02/18		TLM6	CO4	---	
No. of classes required to complete UNIT-IV		11	No. of classes taken:					

UNIT – 5: ADVANCED BEHAVIORAL MODELING & ARCHITECTURAL MODELING

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
42.	Advanced Behavioral Modeling: Events and Signals	1	28/02/18		TLM1, TLM2	CO5	T1	
43.	State Machines	2	03/03/18 05/03/18		TLM1, TLM2	CO5	T1	
44.	Processes and Threads	1	06/03/18		TLM1, TLM2	CO5	T1	
45.	Time and Space	1	07/03/18		TLM1, TLM2	CO5	T1	

46.	State Chart Diagrams	1	10/03/18		TLM1, TLM2, TLM8	CO5	T1	
47.	Architectural Modeling: Component and Deployment	1	12/03/18		TLM1, TLM2	CO5	T1	
48.	Deployment	1	13/03/18		TLM1, TLM2	CO5	T1	
49.	Case Study	1	14/03/18		TLM9	CO5	T1	
50.	TUTORIAL - 5	1	17/03/18		TLM3	CO5	---	
51.	Assignment / Quiz - 5	1	19/03/018		TLM6	CO5	---	
No. of classes required to complete UNIT-V		11	No. of classes taken:					

Contents beyond the Syllabus:

S. No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
52.	Introduction to Design Patterns	1						
53.	Catalog of Design Pattern	1						
54.	How Design Patterns solve day-to-day problems?	1						

Teaching Learning Methods

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

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

and norms of the engineering practice.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

Course Instructor

Course Coordinator

Module Coordinator

HOD

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

COURSE HANDOUT

PROGRAM : B.Tech., VI-Sem., CSE -B
ACADEMIC YEAR : 2017-18
COURSE NAME & CODE : WEB TECHNOLOGIES – S425
L-T-P STRUCTURE : 3-1-0
COURSE CREDITS : 3
COURSE INSTRUCTOR : N. SRINIVASARAO
COURSE COORDINATOR : A. SUDHAKAR
PRE-REQUISITE: C, C++, JAVA Languages

COURSE OBJECTIVE: On completion of this course, a student will be familiar with client server architecture and able to develop a web application using java technologies. Students will gain the skills and project-based experience needed for entry into web application and development careers

COURSE OUTCOMES (CO)

- CO1: Design web pages with HTML & DHTML.
CO2: Apply basic concepts of XML, DOM & SAX and Java Beans to solve real world problems.
CO3: Design dynamic web pages using server side component Servlets.
CO4: Create real world web applications using JSP.
CO5: Apply Swings & Struts framework for application development.

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

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

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

BOS APPROVED TEXT BOOKS:

T1	Chris Bates ,Web Programming, building internet applications, WILEY Dreamtech. (UNITS-1, 2, 3, 4) 2nd edition.
T2	Bill Siggelkow, S P D ,Jakarta Struts Cookbook , O'Reilly (UNIT-5)

BOS APPROVED REFERENCE BOOKS:

R1	Sebesta ,Programming world wide web, Pearson
R2	Marty - Hall and Larry Brown ,Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES , Pearson
R3	3. Dietel and Nieto ,Internet and World Wide Web , How to program by PHI/Pearson Education Asia.
R4	4. Sebesta, Programming world wide web, Java Server Pages, Pekowsky, Pearson.

COURSE DELIVERY PLAN (LESSON PLAN): Section-B**UNIT-I: HTML, CSS, JAVASCRIPT AND DHTML**

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
1.	Introduction & COs explanation	1	27/11/17		TLM1, TLM5	CO1	T1, R1	
2.	Introduction to HTML	1	28/11/17		TLM1, TLM5	CO1	T1, R1	
3.	HTML basic Tags: Lists, Formatting Tags.	1	30/11/17		TLM1, TLM5	CO1	T1, R1	
4.	Table Tags and its Attributes, Image Tag and its Attributes	1	1/12/17		TLM1, TLM5	CO1	T1, R1	
5.	Links - Internal & External - Framesets - Nested Frames	1	4/12/17		TLM1, TLM5	CO1	T1, R1	
6.	HTML Form Elements and its attributes	1	5/12/17		TLM1, TLM5	CO1	T1, R1	
7.	Cascading Style Sheets- Explanation, Importance, Basics	1	7/12/17		TLM1, TLM5	CO1	T1, R1	
8.	Types of Cascading Style Sheets	1	8/12/17		TLM1, TLM5	CO1	T1, R1	
9.	Introduction to Java Scripts	1	11/12/17		TLM1, TLM5	CO1	T1, R1	
10.	Usage of Objects in Java Script	1	12/12/17		TLM1, TLM5	CO1	T1, R1	
11.	Regular expressions in Java Script	1	14/12/17		TLM1, TLM5	CO1	T1, R1	
12.	Java Script Form Validation	1	15/12/17		TLM1, TLM5	CO1	T1, R1	
13.	TUTORIAL - 1	1	18/12/17		TLM3	CO1	---	
14.	Assignment/Quiz-1	1	19/12/17		TLM6	CO1	---	
No. of classes required to complete UNIT-I		14	No. of classes taken:					

UNIT-II: XML & JAVA BEANS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
15.	XML Fundamentals	1	21/12/17		TLM1, TLM5	CO2	T1, R1	
16.	Anatomy of Basic XML program	1	22/12/17		TLM1, TLM5	CO2	T1, R1	
17.	Well-formed ness and Validity of XML	1	26/12/17		TLM1, TLM5	CO2	T1, R1	
18.	Document type definition(DTD) with examples	1	28/12/17		TLM1, TLM5	CO2	T1, R1	
19.	XML Schema with examples	1	29/12/17		TLM1, TLM5	CO2	T1, R1	
20.	Document Object model (DOM)	1	1/01/18		TLM1, TLM5	CO2	T1, R1	
21.	Using XML Processors: DOM and SAX	1	2/01/18		TLM1, TLM5	CO2	T1, R1	

22.	Java Beans : Introduction to Java Beans	1	4/01/18		TLM1, TLM5	CO2	T1, R1	
23.	Java Beans API	1	5/01/18		TLM1, TLM5	CO2	T1, R1	
24.	EJB's and its types	1	8/01/18		TLM1, TLM5	CO2	T1, R1	
25.	BDK with example programs	1	9/01/18		TLM1, TLM5	CO2	T1, R1	
26.	TUTORIAL-2	1	11/01/18		TLM3	CO2	---	
27.	Assignment/Quiz-2	1	12/01/18		TLM6	CO2	---	
No. of classes required to complete UNIT-II		13	No. of classes taken:					

UNIT-III: SERVLETS

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
28.	Introduction to Web Servers and Servlets	1	15/01/18		TLM1, TLM5	CO3	T1, R2	
29.	Lifecycle of a Servlet with example	1	22/01/18		TLM1, TLM5	CO3	T1, R2	
30.	The Servlet API, javax.servlet and javax.servlet.http packages	1	23/01/18		TLM1, TLM5	CO3	T1, R2	
31.	ServletConfig and ServletContext interfaces with example programs	1	25/01/18		TLM1, TLM5	CO3	T1, R2	
32.	RequestDispatcher Interface usage	1	29/01/18		TLM1, TLM5	CO3	T1, R2	
33.	Database interaction through Servlet Pages	1	30/01/18		TLM1, TLM5	CO3	T1, R2	
34.	Insertion, deletion and searching operations on database through servlet pages	1	1/02/18		TLM1, TLM5	CO3	T1, R2	
35.	Dynamic web application example	1	2/02/18		TLM1, TLM5	CO3	T1, R2	
36.	Http Request & Responses	1	5/02/18		TLM1, TLM5	CO3	T1, R2	
37.	Session Tracking with example program	1	6/02/18		TLM1, TLM5	CO3	T1, R2	
38.	Cookies concept with example program	1	8/02/18		TLM1, TLM5	CO3	T1, R2	
39.	TUTORIAL-3	1	9/02/18		TLM3	CO3	---	
40.	Assignment/Quiz-3	1	12/02/18		TLM6	CO3	---	
No. of classes required to complete UNIT-III		13	No. of classes taken:					

UNIT-IV: JSP

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
41.	Introduction to JSP	1	15/02/18		TLM1, TLM5	CO4	T1, R2	
42.	Components of JSP and its life cycle	1	16/02/18		TLM1, TLM5	CO4	T1, R2	
43.	Scripting elements of JSP	1	19/02/18		TLM1, TLM5	CO4	T1, R2	
44.	JSP Implicit Objects	1	20/02/18		TLM1, TLM5	CO4	T1, R2	
45.	JSP Implicit Objects	1	22/02/18		TLM1, TLM5	CO4	T1, R2	

46.	Conditional Processing – Displaying Values in JSP	1	23/02/18		TLM1, TLM5	CO4	T1, R2	
47.	JSP Directive elements	1	26/02/18		TLM1, TLM5	CO4	T1, R2	
48.	Action elements in JSP	1	27/02/18		TLM1, TLM5	CO4	T1, R2	
49.	Declaring Variables and Methods, Error Handling and Debugging	1	1/03/18		TLM1, TLM5	CO4	T1, R2	
50.	Accessing Database through JSP pages, Simple JSP application	1	5/03/18		TLM1, TLM5	CO4	T1, R2	
51.	TUTORIAL-4	1	6/03/18		TLM3	CO4	---	
52.	Assignment/Quiz-4	1	8/03/18		TLM6	CO4	---	
No. of classes required to complete UNIT-IV		12	No. of classes taken:					

UNIT-V: Swings & Struts Framework

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
53.	Introducing Swing , key features of swings.	1	9/03/18		TLM1, TLM5	CO5	T2, R1	
54.	Limitations of AWT, Components & containers	1	12/03/18		TLM1, TLM5	CO5	T2, R1	
55.	JApplet , JFrame and JComponent	1	13/03/18		TLM1, TLM5	CO5	T2, R1	
56.	Labels, text fields, buttons	1	15/03/18		TLM1, TLM5	CO5	T2, R1	
57.	Tabbed Panes, Scroll Panes, Trees	1	16/03/18		TLM1, TLM5	CO5	T2, R1	
58.	Introduction to Struts	1	19/03/18		TLM1, TLM5	CO5	T2, R1	
59.	Overview of MVC Design Pattern	1	20/03/18		TLM1, TLM5	CO5	T2, R1	
60.	Struts Controller components, Struts example programs	1	22/03/18		TLM1, TLM5	CO5	T2, R1	
61.	TUTORIAL-5	1	23/03/18		TLM3	CO5	---	
62.	Assignment/Quiz-5	1	23/03/18		TLM6	CO5	---	
No. of classes required to complete UNIT-V		10	No. of classes taken:					

Contents beyond the Syllabus

S.No.	Topics to be covered	No. of Classes Required	Tentative Date of Completion	Actual Date of Completion	Teaching Learning Methods	Learning Outcome COs	Text Book followed	HOD Sign Weekly
63.	JDBC Introduction				TLM1, TLM5	CO3, CO4	T1, R2	
64.	java.sql.* package explanation				TLM1, TLM5	CO3, CO4	T1, R2	

Teaching Learning Methods

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

EVALUATION PROCESS:

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

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs):

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

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

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

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

PROGRAMME OUTCOMES (POs):

Engineering Graduates will be able to:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and

research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

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

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Programming Paradigms:

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

2. Data Engineering:

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

3. Software Engineering:

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

Course Instructor

Course Coordinator

Module Coordinator

HOD