	<b>LESSON PLAN</b>	<b>Date:</b> 30/11/2015
	<b>Sub. Name : COMPILER DESIGN</b> <b>Branch: CSE, Semester &amp; Sections: VI &amp; B</b>	To 18/04/2015

### T141 – COMPILER DESIGN

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

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#### UNIT – I

**Overview of Compilation:** Phases of Compilation – Lexical Analysis, pass and Phases of translation, interpretation, bootstrapping, data structures in compilation – LEX lexical analyzer generator

#### UNIT – II

**Context Free grammars:** Context free grammars, derivation, parse trees, ambiguity grammars

**Top down Parsing:** Top down parsing – Backtracking, LL (1), recursive descent parsing, Predictive parsing, Preprocessing steps required for predictive parsing.

#### UNIT – III

**Bottom up parsing:** Shift Reduce parsing, LR and LALR parsing, Error recovery in parsing , handling ambiguous grammar, YACC – automatic parser generator .

#### UNIT – IV

**Semantic analysis:** Syntax directed translation, S-attributed and L-attributed grammars, Type checker. Intermediate code – abstract syntax tree, polish notation and three address codes , translation of simple statements and control flow statements

**Run time storage:** Storage organization, storage allocation strategies scope access to now local names, parameters, language facilities for dynamics storage allocation.

## **UNIT – V**

**Code optimization:** Consideration for Optimization, Scope of Optimization, local optimization, loop optimization, frequency reduction, folding, DAG representation.

**Code generation:** Machine dependent code generation, object code forms, generic code generation algorithm, Register allocation and assignment. Using DAG representation of Block.

## **TEXT BOOK**

Compilers Principles, Techniques and Tools Aho, Ullman, Ravisethi, Pearson Education.

## **REFERENCES**

1. Modern Compiler Construction in C , Andrew W.Appel Cambridge University Press.
2. Compiler Construction, LOUDEN, Thomson.

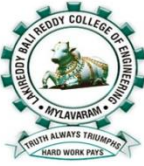
**Pre requisite:** knowledge in Theory of Computation.

### **Course Educational Objectives:**

- To introduce the major concept areas of language translation and compiler design.
- To enrich the knowledge in various phases of compiler ant its use, code optimization techniques, machine code generation, and use of symbol table.
- To extend the knowledge of parser by parsing LL parser and LR parser.
- To provide practical programming skills necessary for constructing a compiler.

**Course Outcomes:** After completion of this course a student can able to

1. Design and implement lexical analyzer using LEX tool.
2. Apply context-free grammar and PDA design concepts to design parsers.
3. Design and implement Bottom-Up parser using YACC
4. Create frameworks for syntax directed translation schemes, type checking and intermediate code generation.
5. Analyze various code optimization techniques and code generation

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	Academic year: 2015-16	Course: Compiler Design
	Programme: B.Tech	Unit No: 1 to 5
	Year & Sem: III & II (VI sem)	Section: B

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

#### Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT-I: OVERVIEW OF COMPILATION</b>						
1	Introduction	30/11/15		2	1	1,3,5,7
2	Phases of Compilation	01/12/15		2	1	
3	Phases of Compilation	02/12/15		2	1	
4	Lexical Analysis	03/12/15		2	1	
5	Lexical Analysis –input buffering	05/12/15		2	1	
6	Lexical Analysis –Finite Automata	07/12/15		2	1,9	
7	Lexical Analysis –Finite Automata	08/12/15		2	1,9	
8	Lexical Analysis –Regular expressions	09/12/15		2	1,9	
9	Pass & Phase	10/12/15		2	1	
10	Interpretation, Bootstrapping	14/12/15		2	1	

11	Data Structures in Compilation	15/12/15		2	1	
12	LEX	16/12/15		2	1,9	
13	<b>Tutorial - I</b>	17/12/15				
<b>UNIT –II: Context Free Grammars &amp; Top down Parsing</b>						
14	Context Free Grammars	19/12/15		2	1	1,3,5,7
15	Derivation & Parse Trees	21/12/15		2	1,9	
16	Ambiguity	22/12/15		2	1,9	
17	Elimination of Ambiguity	23/12/15		2	1,9	
18	Top down Parsing	26/12/15		2	1	
19	Back Tracking	18/01/16		2	1	
20	Recursive Descent Parsing	19/01/16		2	1	
21	Pre processing Steps required for PP	20/01/16		2	1	
22	First & Follow	21/01/16		2	1,9	
23	First & Follow	23/01/16		2	1,9	
24	Predictive Parsing	25/01/16		2	1	
25	LL(1)	27/01/16		2	1,9	
26	LL(1)	28/01/16		2	1,9	
27	<b>Tutorial - II</b>	30/01/16				
29	MID – I EXAMS	01/02/16				
30		02/02/16				
31		03/02/16				
32		04/02/16				
33		06/02/16				
<b>UNIT –III: Bottom up Parsing</b>						
34	Introduction	08/02/16		2	1	1,3,5,7
35	Shift Reduce Parsing	09/02/16		2	1	
36	Shift Reduce Parsing	10/02/16		2	1,9	
37	LR parsing	11/02/16		2	1	
38	SLR	15/02/16		2	1	
39	SLR	16/02/16		2	1,9	
40	<b>Tutorial - III</b>	17/02/16				

41	CLR	18/02/16		2	1	
42	CLR	20/02/16		2	1,9	
43	LALR	22/02/16		2	1	
44	Error recovery in parsing	23/02/16		2	1	
45	Handling Ambiguous grammar	24/02/16		2	1,9	
46	YACC	25/02/16		2	1	
47	<b>Tutorial - IV</b>	27/02/16				
<b>UNIT –IV: Semantic Analysis &amp; Run time Storage</b>						
48	Syntax directed Translation	29/02/16		2	1,2	1,3,5,7
49	S-attributed and L-attributed grammars	01/03/16		2	1,2	
50	S-attributed and L-attributed grammars	02/03/16		2	1,2	
51	Type checker	03/03/16		2	1,2	
52	Type checker	05/03/16		2	1,2	
53	Intermediate code – abstract syntax tree, polish notation, Three address codes	08/03/16		2	1,2	
54	Three address codes	09/03/16		2	1,2	
55	Translation of simple statements and control flow statements	10/03/16		2	1,2	
56	<b>Tutorial –V</b>	14/03/16				
57	Run time storage: Storage Organization	15/03/16		2	1,2	
58	Storage allocation strategies	16/03/16		2	1,2	
59	Scope access to local names, parameters	17/03/16		2	1,2	
60	Language facilities for dynamics storage allocation	19/03/16		2	1,2	
<b>UNIT –V: Code Optimization &amp; Code Generation</b>						
61	Code Optimization: Introduction	21/03/16		2	1,2	1,3,5,7
62	Principle sources of optimization	22/03/16		2	1,2	
63	Scope, Local & Loop optimization	23/03/16		2	1,2	
64	Frequency reduction, Folding	24/03/16		2	1,2	
65	DAG representation	26/03/16		2	1,2	
66	Code generation: Introduction	28/03/16		2	1,2	
67	Machine dependent code generation	29/03/16		2	1,2	
68	Object code forms	30/03/16		2	1,2	

69	Generic code generation algorithm	31/03/16		2	1,2
70	Register allocation & assignment	02/04/16		2	1,2
71	DAG representation of basic block	04/04/16		2	1,2
72	Peephole optimization	06/04/16		2	1,2
73	<b>Tutorial – VI</b>	07/04/16			
74		11/04/16			
75	II MID EXAMS	12/04/16			
76		13/04/16			
77		16/04/16			
78		18/04/16			

Resources Used:

**Text Book:**

Compilers Principles, Techniques and Tools Aho, Ullman, Ravisethi, Pearson Education.

**References:**

1. Modern Compiler Construction in C, Andrew W.Appel Cambridge University Press.
2. Compiler Construction, LOUDEN, Thomson.

**Assessment Summary:**

Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Program Outcomes and Program Specific Outcomes:**

Course Code	Unit	Course Outcomes					Program Outcomes												Program Specific Outcomes		
		1	2	3	4	5	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
T141	I	×					3	3		1									1		
	II		×				3	3													1
	III			×			3	3		2											1
	IV				×		3	3											1		
	V					×	3	3											2		1

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	D. Veeraiah	D. Veeraiah		Dr. N. Ravi Shankar
Sign with Date				





### LESSON PLAN

Date:

30-11-2015

to

18-04-2015

Sub. Name : LINUX INTERNALS LAB

Branch: CSE

Semester : VI

Sections : A

#### P848 – LINUX INTERNALS LAB.

Lab.	: 3 Periods/week	Internal Marks	: 25
Tutorial	:	External Marks	: 75
Credits	: 2	External Examination	: 3 Hrs

#### Cycle 1

##### Session-1

- Log into the system
- Use vi editor to create a file called myfile.txt which contains some text.
- correct typing errors during creation.
- Save the file
- logout of the system

##### Session-2

- Log into the system
- open the file created in session 1
- Add some text
- Change some text
- Delete some text
- Save the Changes
- Logout of the system

##### Session-3

Practicing the commands PATH, man, echo, printf, script, passwd, uname, who, date, stty, pwd, cd, mkdir, rmdir, ls, cp, mv, rm, cat, more, wc, lp, od, tar, gzip and other commands.

#### Cycle 2

##### Session-1

- Log into the system
- Use the cat command to create a file containing the following data. Call it mytable use tabs to separate the fields.

1425	Ravi	15.65
4320	Ramu	26.27
6830	Sita	36.15
1450	Raju	21.86

- Use the cat command to display the file, mytable.
- Use the vi command to correct any errors in the file, mytable.
- Use the sort command to sort the file mytable according to the first field. Call the sorted file my table (same name)
- Print the file mytable
- Use the cut and paste commands to swap fields 2 and 3 of mytable. Call it my table (same name)
- Print the new file, mytable
- Logout of the system.

##### Session-2

Practicing the commands unlink, du, df, mount, umount, find, unmask, ulimit, ps, w, finger, arp, ftp, telnet, rlogin

### **Cycle 3**

#### Session-1

#### Practicing the commands

tail, head, nl, uniq, tee, pg, comm, cmp, diff, tr, cpio.

#### Session-2

- 1)
  - a) Login to the system
  - b) Use the appropriate command to determine your login shell
  - c) Use the /etc/passwd file to verify the result of step b.
- d) Use the who command and redirect the result to a file called myfile1. Use the more command to see the contents of myfile1.
- e) Use the date and who commands in sequence (in one line) such that the output of date will display on the screen and the output of who will be redirected to a file called myfile2. Use the more command to check the contents of myfile2.
- 2) Pipe your/etc/passwd file to awk, and print out the home directory of each user.

### **Cycle 4**

- a) Develop an interactive grep script that asks for a word and a file name and then tells how many lines contain that word
- b) Write a sed command that deletes the first character in each line in a file.
- c) Write a sed command that deletes the character before the last character in each line in a file.
- d) Write a sed command that swaps the first and second words in each line in a file.

### **Cycle 5**

- a) Write a shell script that takes a command –line argument and reports on whether it is directory, a file, or something else.
- b) Write a shell script that accepts one or more file name as arguments and converts all of them to uppercase, provided they exist in the current directory.

### **Cycle 6**

- a) Write a shell script that determines the period for which a specified user is working on the system
- b) Write a shell script that accepts a file name starting and ending line numbers as arguments and displays all the lines between the given line numbers.

### **Cycle 7**

- a) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.
- b) Write a shell script that computes the gross salary of an employee according to the following rules:
  - i) If basic salary is < 1500 then HRA =10% of the basic and DA =90% of the basic.
  - ii) If basic salary is >=1500 then HRA =Rs500 and DA=98% of the basic. The basic salary is entered interactively through the key board.

### **Cycle 8**

- a) Write a shell script that accepts two integers as its arguments and computes the value of first number raised to the power of the second number.
- b) Write an interactive file-handling shell program. Let it offer the user the choice of copying, removing, renaming, or linking files. Once the user has made a choice, have the program ask the user for the necessary information, such as the file name, new name and so on.

### **Cycle 9**

- a) Write a shell script that takes a login name as command – line argument and reports when that person logs in
- b) Write a shell script which receives two file names as arguments. It should check whether the two file contents are same or not. If they are same then second file should be deleted.

### **Cycle 10**

- a) Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions.
- b) Develop an interactive script that ask for a word and a file name and then tells how many times that word occurred in the file.
- c) Write a shell script to perform the following string operations:
  - i) To extract a sub-string from a given string.
  - ii) To find the length of a given string.


**Pre requisite:** knowledge in programming language.

**Course Educational Objectives:**

- To familiarize students with the Linux environment
- To learn the fundamentals of shell scripting/programming

**Course Outcomes: After completion of this course a student can able to**

- CO1: Use Linux environment efficiently.  
CO2: Develop and solve problems using bash for shell scripting.

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	<b>Academic year : 2015-16</b>	<b>Course: LINUX INTERNALS LAB</b>
	<b>Programme : B.Tech</b>	<b>Unit No: 1 to 5</b>
	<b>Year &amp; Sem : III &amp; II (VI sem)</b>	<b>Section: A &amp; B</b>

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

Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM												
		Tentative	Actual															
1.	Introduction to LINUX Environment	04-12-2015	30/11/15	3	2	5												
2.	Logging to LINUX server	11-12-2015	09/12/15	3	2	5												
3.	<p><b>Cycle 1 Session-1</b></p> <p>a)Log into the system b)Use vi editor to create a file called myfile.txt which contains some text. c)correct typing errors during creation. d)Save the file e)logout of the system</p> <p><b>Session-2</b></p> <p>a)Log into the system b)open the file created in session 1 c)Add some text d)Change some text e)Delete some text f)Save the Changes g)Logout of the system</p> <p><b>Session-3</b></p> <p>Practicing the commands PATH, man, echo, printf, script, passwd, uname, who, date, stty, pwd, cd, mkdir, rmdir, ls, cp, mv, rm, cat, more, wc, lp, od, tar, gzip and other commands.</p>	18-12-2015	11/12/15	3	2	5												
4.	<p><b>Cycle 2 Session-1</b></p> <p>a)Log into the system b)Use the cat command to create a file containing the following data. Call it mytable use tabs to separate the fields.</p> <table style="margin-left: 40px;"> <tr> <td>1425</td> <td>Ravi</td> <td>15.65</td> </tr> <tr> <td>4320</td> <td>Ramu</td> <td>26.27</td> </tr> <tr> <td>6830</td> <td>Sita</td> <td>36.15</td> </tr> <tr> <td>1450</td> <td>Raju</td> <td>21.86</td> </tr> </table> <p>c)Use the cat command to display the file, mytable. d)Use the vi command to correct any errors in the file, mytable. e)Use the sort command to sort the file mytable according to the first field. Call the sorted file my table (same name) f)Print the file mytable g)Use the cut and paste commands to swap fields 2 and 3 of mytable. Call it my table (same name) h)Print the new file, mytable i)Logout of the system.</p> <p><b>Session-2</b></p> <p>Practicing the commands unlink, du, df, mount, umount, find, unmask, ulimit, ps,w, finger, arp, ftp, telnet, rlogin</p>	1425	Ravi	15.65	4320	Ramu	26.27	6830	Sita	36.15	1450	Raju	21.86	22-01-2016	18/12/15	3	2	5
1425	Ravi	15.65																
4320	Ramu	26.27																
6830	Sita	36.15																
1450	Raju	21.86																
5.	<p><b>Cycle 3 Session-1</b></p> <p>Practicing the commands tail, head, nl, uniq, tee, pg, comm, cmp, diff, tr, cpio.</p> <p><b>Session-2</b></p> <p>1)a)Login to the system b)Use the appropriate command to determine your login shell c)Use the/etc/passwd file to verify the result of step b. d)Use the who command and redirect the result to a file called myfile1. Use the more command to see the contents of myfile1. e)Use the date and who commands in sequence (in one line) such that the output of date will display on the screen and the output of who will be redirected to a file called myfile2. Use the more command to check the contents of myfile2. 2)Pipe your/etc/passwd file to awk, and print out the home directory of each user.</p>	29-01-2016	09/01/15	3	2	5												

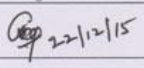
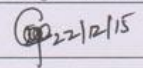
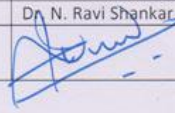
6.	<p><b>Cycle 4</b></p> <p>a) Develop an interactive grep script that asks for a word and a file name and then tells how many lines contain that word</p> <p>b) Write a sed command that deletes the first character in each line in a file.</p>	05-02-2016	08/01/16	3	2	5
7.	<p><b>Cycle 4</b></p> <p>c) Write a sed command that deletes the character before the last character in each line in a file.</p> <p>d) Write a sed command that swaps the first and second words in each line in a file.</p>	12-02-2016	23/01/16	3	2	5
8.	<p><b>Cycle 5</b></p> <p>a) Write a shell script that takes a command -line argument and reports on whether it is directory, a file, or something else.</p> <p>b) Write a shell script that accepts one or more file name as arguments and converts all of them to uppercase, provided they exist in the current directory.</p>	19-02-2016	29/01/16 12-02-16	3	2	5
9.	<p><b>Cycle 6</b></p> <p>a) Write a shell script that determines the period for which a specified user is working on the system</p> <p>b) Write a shell script that accepts a file name starting and ending line numbers as arguments and displays all the lines between the given line numbers.</p>	26-02-2016	19-02-16	3	2	5
10.	<p><b>Cycle 7</b></p> <p>a) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.</p> <p>b) Write a shell script that computes the gross salary of an employee according to the following rules:</p> <p>i) If basic salary is &lt; 1500 then HRA = 10% of the basic and DA = 90% of the basic.</p> <p>ii) If basic salary is &gt;= 1500 then HRA = Rs500 and DA = 98% of the basic</p> <p>The basic salary is entered interactively through the key board.</p>	04-03-2016	26-02-16	3	2	5
11.	<p><b>Cycle 8</b></p> <p>a) Write a shell script that accepts two integers as its arguments and computes the value of first number raised to the power of the second number.</p> <p>b) Write an interactive file-handling shell program. Let it offer the user the choice of copying, removing, renaming, or linking files. Once the user has made a choice, have the program ask the user for the necessary information, such as the file name, new name and so on.</p>	11-03-2016	04-03-16	3	2	5
12.	<p><b>Cycle 9</b></p> <p>a) Write shell script that takes a login name as command -line argument and reports when that person logs in</p> <p>b) Write a shell script which receives two file names as arguments. It should check whether the two file contents are same or not. If they are same then second file should be deleted.</p>	18-03-2016	11-03-16 18-03-16	3	2	5
13.	<p><b>Cycle 10</b></p> <p>a) Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions.</p> <p>b) Develop an interactive script that ask for a word and a file name and then tells how many times that word occurred in the file.</p> <p>c) Write a shell script to perform the following string operations:</p> <p>i) To extract a sub-string from a given string.</p> <p>ii) To find the length of a given string.</p>	25-03-2016	31-03-16 01-04-16	3	2	5
14.	INTERNAL LAB EXAMINATION	01-04-2016	01-04-16			

**Assessment Summary:**

Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Cycle	Course Outcomes		Programme Outcomes										
		1	2	a	b	c	d	e	f	g	h	i	j	k
P848	1	√			√			√				√		√
	2	√			√			√				√		√
	3	√			√			√				√		√
	4		√		√			√				√		√
	5		√		√			√				√		√
	6		√		√			√				√		√
	7		√		√			√				√		√
	8		√		√			√				√		√
	9		√		√			√				√		√
	10		√		√			√				√		√

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G.Nageswara Rao	GNageswara Rao		Dr. N. Ravi Shankar
Sign with Date	 22/12/15	 22/12/15		



### LESSON PLAN

Sub. Name : LINUX INTERNALS LAB  
Branch: CSE Semester : VI Sections : B

Date:  
30-11-2015  
to  
18-04-2015

#### P848 – LINUX INTERNALS LAB.

Lab. : 3 Periods/week Internal Marks : 25  
Tutorial : External Marks : 75  
Credits : 2 External Examination : 3 Hrs

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#### Cycle 1

##### Session-1

- Log into the system
- Use vi editor to create a file called myfile.txt which contains some text.
- correct typing errors during creation.
- Save the file
- logout of the system

##### Session-2

- Log into the system
- open the file created in session 1
- Add some text
- Change some text
- Delete some text
- Save the Changes
- Logout of the system

##### Session-3

Practicing the commands PATH, man, echo, printf, script, passwd, uname, who, date, stty, pwd, cd, mkdir, rmdir, ls, cp, mv, rm, cat, more, wc, lp, od, tar, gzip and other commands.

#### Cycle 2

##### Session-1

- Log into the system
- Use the cat command to create a file containing the following data. Call it mytable use tabs to separate the fields.

1425	Ravi	15.65
4320	Ramu	26.27
6830	Sita	36.15
1450	Raju	21.86

- Use the cat command to display the file, mytable.
- Use the vi command to correct any errors in the file, mytable.
- Use the sort command to sort the file mytable according to the first field. Call the sorted file my table (same name)
- Print the file mytable
- Use the cut and paste commands to swap fields 2 and 3 of mytable. Call it my table (same name)
- Print the new file, mytable
- Logout of the system.

##### Session-2

Practicing the commands unlink, du, df, mount, umount, find, unmask, ulimit, ps, w, finger, arp, ftp, telnet, rlogin

### Cycle 3

#### Session-1

Practicing the commands

tail, head, nl, uniq, tee, pg, comm, cmp, diff, tr, cpio.

#### Session-2

- 1)
  - a) Login to the system
  - b) Use the appropriate command to determine your login shell
  - c) Use the /etc/passwd file to verify the result of step b.
- d) Use the who command and redirect the result to a file called myfile1. Use the more command to see the contents of myfile1.
- e) Use the date and who commands in sequence (in one line) such that the output of date will display on the screen and the output of who will be redirected to a file called myfile2. Use the more command to check the contents of myfile2.
- 2) Pipe your/etc/passwd file to awk, and print out the home directory of each user.

### Cycle 4

- a) Develop an interactive grep script that asks for a word and a file name and then tells how many lines contain that word
- b) Write a sed command that deletes the first character in each line in a file.
- c) Write a sed command that deletes the character before the last character in each line in a file.
- d) Write a sed command that swaps the first and second words in each line in a file.

### Cycle 5

- a) Write a shell script that takes a command –line argument and reports on whether it is directory, a file, or something else.
- b) Write a shell script that accepts one or more file name as arguments and converts all of them to uppercase, provided they exist in the current directory.

### Cycle 6

- a) Write a shell script that determines the period for which a specified user is working on the system
- b) Write a shell script that accepts a file name starting and ending line numbers as arguments and displays all the lines between the given line numbers.

### Cycle 7

- a) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.
- b) Write a shell script that computes the gross salary of an employee according to the following rules:
  - i) If basic salary is < 1500 then HRA =10% of the basic and DA =90% of the basic.
  - ii) If basic salary is >=1500 then HRA =Rs500 and DA=98% of the basic The basic salary is entered interactively through the key board.

### Cycle 8

- a) Write a shell script that accepts two integers as its arguments and computes the value of first number raised to the power of the second number.
- b) Write an interactive file-handling shell program. Let it offer the user the choice of copying, removing, renaming, or linking files. Once the user has made a choice, have the program ask the user for the necessary information, such as the file name, new name and so on.

### Cycle 9

- a) Write a shell script that takes a login name as command – line argument and reports when that person logs in
- b) Write a shell script which receives two file names as arguments. It should check whether the two file contents are same or not. If they are same then second file should be deleted.

### Cycle 10

- a) Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions.
- b) Develop an interactive script that ask for a word and a file name and then tells how many times that word occurred in the file.
- c) Write a shell script to perform the following string operations:
  - i) To extract a sub-string from a given string.
  - ii) To find the length of a given string.




**Pre requisite:** knowledge in programming language.

**Course Educational Objectives:**

- To familiarize students with the Linux environment
- To learn the fundamentals of shell scripting/programming

**Course Outcomes: After completion of this course a student can able to**

- CO1: Use Linux environment efficiently.  
CO2: Develop and solve problems using bash for shell scripting.

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	<b>Academic year : 2015-16</b>	<b>Course: LINUX INTERNALS LAB</b>
	<b>Programme : B.Tech</b>	<b>Unit No: 1 to 5</b>
	<b>Year &amp; Sem : III &amp; II (VI sem)</b>	<b>Section: A &amp; B</b>

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

Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM												
		Tentative	Actual															
1.	Introduction to LINUX Environment	30-11-2015	30/11/15	3	2	5												
2.	Logging to LINUX server	07-12-2015	07/12/15	3	2	5												
3.	<p><b>Cycle 1 Session-1</b></p> <p>a)Log into the system                      b)Use vi editor to create a file called myfile.txt which contains some text.                      c)correct typing errors during creation.                      d)Save the file                      e)logout of the system</p> <p><b>Session-2</b></p> <p>a)Log into the system                      b)open the file created in session 1                      c)Add some text                      d)Change some text                      e)Delete some text                      f)Save the Changes                      g)Logout of the system</p> <p><b>Session-3</b></p> <p>Practicing the commands PATH, man, echo, printf, script, passwd, uname, who, date, stty, pwd, cd, mkdir, rmdir, ls, cp, mv, rm, cat, more, wc, lp, od, tar, gzip and other commands.</p>	14-12-2015	14/12/15	3	2	5												
4.	<p><b>Cycle 2 Session-1</b></p> <p>a)Log into the system                      b)Use the cat command to create a file containing the following data. Call it mytable use tabs to separate the fields.</p> <table style="margin-left: 40px;"> <tr> <td>1425</td> <td>Ravi</td> <td>15.65</td> </tr> <tr> <td>4320</td> <td>Ramu</td> <td>26.27</td> </tr> <tr> <td>6830</td> <td>Sita</td> <td>36.15</td> </tr> <tr> <td>1450</td> <td>Raju</td> <td>21.86</td> </tr> </table> <p>c)Use the cat command to display the file, mytable                      d)Use the vi command to correct any errors in the file, mytable.                      e)Use the sort command to sort the file mytable according to the first field. Call the sorted file my table (same name)                      f)Print the file mytable                      g)Use the cut and paste commands to swap fields 2 and 3 of mytable. Call it my table (same name)                      h)Print the new file, mytable                      i)Logout of the system.</p> <p><b>Session-2</b></p> <p>Practicing the commands unlink, du, df, mount, umount, find, unmask, ulimit, ps,w, finger, arp, ftp, telnet, rlogin</p>	1425	Ravi	15.65	4320	Ramu	26.27	6830	Sita	36.15	1450	Raju	21.86	21-12-2015	21/12/15	3	2	5
1425	Ravi	15.65																
4320	Ramu	26.27																
6830	Sita	36.15																
1450	Raju	21.86																
5.	<p><b>Cycle 3 Session-1</b></p> <p>Practicing the commands                      tail, head, nl, uniq, tee, pg, comm, cmp, diff, tr,cpio.</p> <p><b>Session-2</b></p> <p>1)a)Login to the system                      b)Use the appropriate command to determine your login shell                      c)Use the/etc/passwd file to verify the result of step b.                      d)Use the who command and redirect the result to a file called myfile1. Use the more command to see the contents of myfile1.                      e)Use the date and who commands in sequence (in one line) such that the output of date will display on the screen and the output of who will be redirected to a file called myfile2. Use the more command to check the contents of myfile2.                      2)Pipe your/etc/passwd file to awk, and print out the home directory of each user.</p>	28-12-2015	28/12/15 04/01/15	3	2	5												

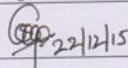
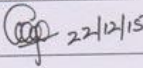

6.	<p><b>Cycle 4</b></p> <p>a) Develop an interactive grep script that asks for a word and a file name and then tells how many lines contain that word</p> <p>b) Write a sed command that deletes the first character in each line in a file.</p>	18-01-2016	04/01/16	3	2	5
7.	<p><b>Cycle 4</b></p> <p>c) Write a sed command that deletes the character before the last character in each line in a file</p> <p>d) Write a sed command that swaps the first and second words in each line in a file.</p>	25-01-2016	18/01/16	3	2	5
8.	<p><b>Cycle 5</b></p> <p>a) Write a shell script that takes a command -line argument and reports on whether it is directory, a file, or something else.</p> <p>b) Write a shell script that accepts one or more file name as arguments and converts all of them to uppercase, provided they exist in the current directory.</p>	08-02-2016	25/01/16 08-02-16	3	2	5
9.	<p><b>Cycle 6</b></p> <p>a) Write a shell script that determines the period for which a specified user is working on the system</p> <p>b) Write a shell script that accepts a file name starting and ending line numbers as arguments and displays all the lines between the given line numbers.</p>	15-02-2016	15-02-16 22-02-16	3	2	5
10.	<p><b>Cycle 7</b></p> <p>a) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.</p> <p>b) Write a shell script that computes the gross salary of an employee according to the following rules:</p> <p>i) If basic salary is &lt; 1500 then HRA =10% of the basic and DA =90% of the basic.</p> <p>ii) If basic salary is &gt;=1500 then HRA =Rs500 and DA=98% of the basic</p> <p>The basic salary is entered interactively through the key board.</p>	22-02-2016	29-02-16	3	2	5
11.	<p><b>Cycle 8</b></p> <p>a) Write a shell script that accepts two integers as its arguments and computes the value of first number raised to the power of the second number.</p> <p>b) Write an interactive file-handling shell program. Let it offer the user the choice of copying, removing, renaming, or linking files. Once the user has made a choice, have the program ask the user for the necessary information, such as the file name, new name and so on.</p>	29-02-2016	14-03-16	3	2	5
12.	<p><b>Cycle 9</b></p> <p>a) Write shell script that takes a login name as command -line argument and reports when that person logs in</p> <p>b) Write a shell script which receives two file names as arguments. It should check whether the two file contents are same or not. If they are same then second file should be deleted.</p>	14-03-2016	21-03-16	3	2	5
13.	<p><b>Cycle 10</b></p> <p>a) Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions.</p> <p>b) Develop an interactive script that ask for a word and a file name and then tells how many times that word occurred in the file.</p>	21-03-2016	21-03-16	3	2	5
14.	<p><b>Cycle 10</b></p> <p>c) Write a shell script to perform the following string operations:</p> <p>i) To extract a sub-string from a given string.</p> <p>ii) To find the length of a given string.</p>	28-03-2016	24-03-16 04-04-16	3	2	5
15.	INTERNAL LAB EXAMINATION	04-04-2016	14/04/16			


**Assessment Summary:**

Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Cycle	Course Outcomes		Programme Outcomes										
		1	2	a	b	c	d	e	f	g	h	i	j	k
P848	1	v			v			v				v		v
	2	v			v			v				v		v
	3	v			v			v				v		v
	4		v		v			v				v		v
	5		v		v			v				v		v
	6		v		v			v				v		v
	7		v		v			v				v		v
	8		v		v			v				v		v
	9		v		v			v				v		v
	10		v		v			v				v		v

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G. Nageswara Rao	GNageswara Rao		Dr. M. Ravi Shankar
Sign with Date	 22/12/15	 22/12/15		

	<b>LESSON PLAN</b>		Date: 30-11-2015
	Sub. Name : <b>LINUX INTERNALS</b> Branch: CSE                      Semester : VI                      Sections : A		to 18-04-2015

**T238 – LINUX INTERNALS**

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

**UNIT - I**

**Introduction:** Operating System Concepts, Introduction to Linux, Linux Terminals & Shell, Linux File System, Concept of process in Linux.

**Linux Shell Command Set:** Navigating File Systems, Handling Files, Regular Expressions, Process Commands, VI Editor.

**UNIT - II**

**Shell Programming / Scripts:** Bourne shell Overview. User, Shell, and Read-Only Shell Variables. Positional Parameters. Control Constructs.

**Inter-Process Communication:** Synchronization in the Kernel, Communication via Files, Pipes, Debugging Using ptrace, System V IPC, IPC with Sockets.

**UNIT – III**

**Linux Internals:** Linux Kernel Structure, System Calls, File Sub-System, Process Sub-System, Linux Signals, Clock & Timers, Memory Management.

**Device Drivers under Linux:** Character and Block Devices, Polling and Interrupts, The Hardware, Implementing a Driver, An Example of DMA Operation.

**UNIT – IV**

**Network Implementation:** Introductory Summary, Important Structures, Network Devices under Linux, ARP – The Address Resolution Protocol, IP, UDP, TCP.

**Modules and Debugging:** What are Modules?, Implementation in the Kernel, What can be Implemented as a Module?, Parameter Passing, The kernel Daemon, An Example Module, Debugging.

**UNIT – V**

**Multi-Processing:** The Intel Multi-processor Specification, Problems with Multi-processor Systems, Changes to the Kernel, Compiling Linux SMP

**TEXT BOOK**

Linux Kernel Internals, M. Beck, H. Bome, et al, Pearson Education, Second Edition, 2001

**REFERENCES**

1. The Design of the UNIX Operating Systems, Maurice. J. Bach, PHI, 1998
2. Operating System Concepts, Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Peter Baer Galvin, Wiley, John & Sons, 2004


**Pre requisite:** knowledge in Operating Systems.

**Course Educational Objectives:**

- Introduce the student to Linux kernel programming techniques.
- Teach advanced C systems programming and debugging techniques in a Linux environment.
- Review basic concepts covered in the core Operating Systems course prerequisite as they are realized in the Linux platform.
- Discuss correct synchronization techniques for both application programs and kernel code running on uni processor as well as multiprocessor (SMM) platforms.

**Course Outcomes: After completion of this course a student can able to**

- CO1. Describe and get used to the LINUX operating system and its commands.
- CO2. Describe and understand the LINUX file system.
- CO3. Describe and use the fundamental LINUX system tools and utilities.
- CO4. Describe and write shell scripts in order to obtain basic shell programming skills.
- CO5. Describe and use of synchronization techniques of uni processor and multiprocessor systems with LINUX operating system.

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	<b>Academic year : 2015-16</b>	<b>Course: LINUX INTERNALS</b>
	<b>Programme : B.Tech</b>	<b>Unit No: 1 to 5</b>
	<b>Year &amp; Sem : III &amp; II (VI sem)</b>	<b>Section: A &amp; B</b>

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

## Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT -I: LINUX INTRODUCTION</b>						
1.	Operating System Concepts	30-11-2015	30/11/15	2	1	1,3,5,7
2.	Introduction To Linux	01-12-2015	01/12/15	2	1	
3.	Terminals And Shell	02-12-2015	02/12/15	2	1	
4.	Linux File System	03-12-2015	03/12/15	2	1	
5.	Concepts Of Process	05-12-2015	04/12/15	2	1	
6.	Basic Commands	07-12-2015	05/12/15	2	1,9	
7.	Basic Commands	08-12-2015	08/12/15	2	1,9	
8.	Basic Commands	09-12-2015	09/12/15	2	1,9	
9.	Navigating File System	10-12-2015	10/12/15	2	1	
10.	Vi Editor	14-12-2015	14/12/15	2	1	
11.	Handling Files	15-12-2015	15/12/15	2	1	
12.	File Handling Commands	16-12-2015	16/12/15	2	1,9	
13.	File Handling Commands	17-12-2015	17/12/15	2	1,9	
14.	File Handling Commands	19-12-2015	18/12/15	2	1,9	
15.	Regular Expressions	21-12-2015	21/12/15	2	1,9	
16.	Regular Expressions	22-12-2015	22/12/15	2	1,9	
17.	Tutorial-I	23-12-2015	25/12/15			
<b>UNIT -II: SHELL PROGRAMMING</b>						
18.	Shell Overview	26-12-2015	26/12/15	2	1	1,3,5,7
19.	User, Shell	28-12-2015	29/12/15	2	1,9	
20.	Variables, Read-Only Variables	29-12-2015	30/12/15	2	1,9	
21.	Positional Parameters	30-12-2015	31/12/15	2	1,9	
22.	Control Structure	31-12-2015	02/01/16	2	1,9	
23.	Shell Scripts	18-01-2016	04/01/16	3	1,9	
24.	Shell Scripts	19-01-2016	05/01/16	3	1,9	
25.	Synchronization In The Kernel	20-01-2016	06/01/16	2	1	
26.	Communication Via Files	21-01-2016	07/01/16	2	1	
27.	Pipes, Redirections	23-01-2016	08/01/16	2	1	
28.	Debugging	25-01-2016	10/01/16	2	1	
29.	System V Ipc	27-01-2016	19/01/16	2	1	
30.	Ipc With Sockets	28-01-2016	20/01/16	2	1	
31.	Tutorial-II	30-01-2016	30/01/16			
32.		01-02-2016	01/02/16			
33.		02-02-2016	02/02/16			
34.	MID - I EXAMS	03-02-2016	03/02/16			
35.		04-02-2016	04/02/16			
36.		06-02-2016	06/02/16			
<b>UNIT -III: LINUX INTERNALS</b>						
37.	Linux Kernel Structures	08-02-2016	09/2/16	2	1	1,3,5,7
38.	System Calls	09-02-2016	10/02/16	2	1	
39.	File Sub-System	10-02-2016	10/02/16	2	1	
40.	Process Sub-System	11-02-2016	11/02/16	2	1	
41.	Linux Signals	15-02-2016	13/02/16	2	1	
42.	Clock & Timers	16-02-2016	15/02/16	2	1	
43.	Memory Management	17-02-2016	16/02/16	2	1	
44.	Character And Block Devices	18-02-2016	18/02/16	2	1	
45.	Polling And Interrupts	20-02-2016	20/02/16	2	1	
46.	Hardware	22-02-2016	22/02/16	2	1	
47.	Implementing A Driver	23-02-2016	23/02/16	2	1	
48.	Dma Operation	24-02-2016	24/02/16	2	1	
49.	Examples Of Dma Operation	25-02-2016	01/3/16	2	1	
50.	Tutorial-III	27-02-2016	02/3/16			

UNIT -IV: NETWORK IMPLEMENTATION						
51.	Import Structures	29-02-2016	05.03.16	2	1	1,3,5,7
52.	Network Devices Under Linux	01-03-2016	05.03.16	2	1	
53.	Network Devices Under Linux	02-03-2016	09.03.16	2	1	
54.	Address Resolution Protocol	03-03-2016	10.03.16	2	1	
55.	IP	05-03-2016	12.03.16	2	1	
56.	UDP	08-03-2016	14.03.16	2	1	
57.	TCP	09-03-2016	15.03.16	2	1	
58.	Modules	10-03-2016	16.03.16	2	1	
59.	Modules implementation in kernel	14-03-2016	17.03.16	2	1	
60.	Parameter Passing	15-03-2016	19.03.16	2	1	
61.	Kernel Daemon	16-03-2016	21.03.16	2	1	
62.	Example module	17-03-2016	22.03.16	2	1	
63.	Debugging	19-03-2016	22.03.16	2	1	
64.	Example Module Debugging	21-03-2016	22.03.16	2	1	
65.	Tutorial-IV	22-03-2016				
UNIT -V: MULTI-PROCESSING						
66.	Intel Multi Processor	23-03-2016	30.03.16	2	1	1,3,5,7
67.	Processor Specifications	24-03-2016	31.03.16	2	1	
68.	Processor Specifications	26-03-2016	31.03.16	2	1	
69.	Advantages With Multi Processor	28-03-2016	02.04.16	2	1	
70.	Disadvantages With Processor	29-03-2016	02.04.16	2	1	
71.	Change To The Kernel	30-03-2016	04.04.16	2	1	
72.	Change To The Kernel	31-03-2016	04.04.16	2	1	
73.	Compiling Linux Smp	02-04-2016	05.04.16	2	1	
74.	Compiling Linux Smp	04-04-2016	06.04.16	2	1	
75.	AWK Script	05-04-2016	07.04.16	2	1	
76.	AWK Script	06-04-2016	09.04.16	2	1	
77.	Tutorial-IV	07-04-2016	—	2	1	
78.	II MID EXAMS	11-04-2016	11/4/16			
79.		12-04-2016	12/4/16			
77		13-04-2016	13/4/16			
78		16-04-2016	16/4/16			
		18-04-2016	18/4/16			

Resources used:

**TEXT BOOK**

Linux Kernel Internals, M. Beck, H. Borne, et al, Pearson Education, Second Edition, 2001

**REFERENCES**

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

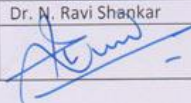


**Assessment Summary:**


Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Unit	Course Outcomes					Programme Outcomes											
		1	2	3	4	5	a	b	c	d	e	f	g	h	i	j	k	
T238	I	v						v	v		v					v		v
	II		v					v	v		v					v		v
	III			v				v	v		v					v		v
	IV				v			v	v		v					v		v
	V					v		v	v		v					v		v

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G.Nageswara Rao	GNageswara Rao		Dr. N. Ravi Shaqkar
Sign with Date	 22/12/15	 22/12/15		



	<b>LESSON PLAN</b>		<b>Date:</b> 30-11-2015
	<b>Sub. Name : LINUX INTERNALS</b> <b>Branch: CSE                      Semester : VI                      Sections : B</b>		to 18-04-2015

### T238 – LINUX INTERNALS

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

#### UNIT - I

**Introduction:** Operating System Concepts, Introduction to Linux, Linux Terminals & Shell, Linux File System, Concept of process in Linux.

**Linux Shell Command Set:** Navigating File Systems, Handling Files, Regular Expressions, Process Commands, VI Editor.

#### UNIT - II

**Shell Programming / Scripts:** Bourne shell Overview. User, Shell, and Read-Only Shell Variables. Positional Parameters. Control Constructs.

**Inter-Process Communication:** Synchronization in the Kernel, Communication via Files, Pipes, Debugging Using ptrace, System V IPC, IPC with Sockets.

#### UNIT – III

**Linux Internals:** Linux Kernel Structure, System Calls, File Sub-System, Process Sub-System, Linux Signals, Clock & Timers, Memory Management.

**Device Drivers under Linux:** Character and Block Devices, Polling and Interrupts, The Hardware, Implementing a Driver, An Example of DMA Operation.

#### UNIT – IV

**Network Implementation:** Introductory Summary, Important Structures, Network Devices under Linux, ARP – The Address Resolution Protocol, IP, UDP, TCP.

**Modules and Debugging:** What are Modules?, Implementation in the Kernel, What can be Implemented as a Module?, Parameter Passing, The kernel Daemon, An Example Module, Debugging.

#### UNIT – V

**Multi-Processing:** The Intel Multi-processor Specification, Problems with Multi-processor Systems, Changes to the Kernel, Compiling Linux SMP

#### TEXT BOOK

Linux Kernel Internals, M. Beck, H. Bome, et al, Pearson Education, Second Edition, 2001

#### REFERENCES

1. The Design of the UNIX Operating Systems, Maurice. J. Bach, PHI, 1998
2. Operating System Concepts, Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Peter Baer Galvin, Wiley, John & Sons, 2004


**Pre requisite:** knowledge in Operating Systems.

**Course Educational Objectives:**

- Introduce the student to Linux kernel programming techniques.
- Teach advanced C systems programming and debugging techniques in a Linux environment.
- Review basic concepts covered in the core Operating Systems course prerequisite as they are realized in the Linux platform.
- Discuss correct synchronization techniques for both application programs and kernel code running on uni processor as well as multiprocessor (SMM) platforms.

**Course Outcomes: After completion of this course a student can able to**

- CO1. Describe and get used to the LINUX operating system and its commands.
- CO2. Describe and understand the LINUX file system.
- CO3. Describe and use the fundamental LINUX system tools and utilities.
- CO4. Describe and write shell scripts in order to obtain basic shell programming skills.
- CO5. Describe and use of synchronization techniques of uni processor and multiprocessor systems with LINUX operating system.

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	<b>Academic year : 2015-16</b>	<b>Course: LINUX INTERNALS</b>
	<b>Programme : B.Tech</b>	<b>Unit No: 1 to 5</b>
	<b>Year &amp; Sem : III &amp; II (VI sem)</b>	<b>Section: A &amp; B</b>

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

## Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT -I: LINUX INTRODUCTION</b>						
1.	Operating System Concepts	30-11-2015	30/11/15	2	1	1,3,5,7
2.	Introduction To Linux	01-12-2015	01/12/15	2	1	
3.	Terminals And Shell	02-12-2015	02/12/15	2	1	
4.	Linux File System	03-12-2015	03/12/15	2	1	
5.	Concepts Of Process	05-12-2015	05/12/15	2	1	
6.	Basic Commands	07-12-2015	08/12/15	2	1,9	
7.	Basic Commands	08-12-2015	09/12/15	2	1,9	
8.	Basic Commands	09-12-2015	10/12/15	2	1,9	
9.	Navigating File System	10-12-2015	14/12/15	2	1	
10.	Vi Editor	14-12-2015	14/12/15	2	1	
11.	Handling Files	15-12-2015	15/12/15	2	1	
12.	File Handling Commands	16-12-2015	16/12/15	2	1,9	
13.	File Handling Commands	17-12-2015	17/12/15	2	1,9	
14.	File Handling Commands	19-12-2015	17/12/15	2	1,9	
15.	Regular Expressions	21-12-2015	21/12/15	2	1,9	
16.	Regular Expressions	22-12-2015	22/12/15	2	1,9	
17.	Tutorial-I	23-12-2015	23/12/15			
<b>UNIT -II: SHELL PROGRAMMING</b>						
18.	Shell Overview	26-12-2015	29/12/15	2	1	1,3,5,7
19.	User, Shell	28-12-2015	29/12/15	2	1,9	
20.	Variables, Read-Only Variables	29-12-2015	30/12/15	2	1,9	
21.	Positional Parameters	30-12-2015	31/12/15	2	1,9	
22.	Control Structure	31-12-2015	02/01/16	2	1,9	
23.	Shell Scripts	18-01-2016	01/01/16	3	1,9	
24.	Shell Scripts	19-01-2016	05/01/16	3	1,9	
25.	Synchronization In The Kernel	20-01-2016	06/01/16	2	1	
26.	Communication Via Files	21-01-2016	07/01/16	2	1	
27.	Pipes, Redirections	23-01-2016	08/01/16	2	1	
28.	Debugging	25-01-2016	19/01/16	2	1	
29.	System V Ipc	27-01-2016	20/01/16	2	1	
30.	Ipc With Sockets	28-01-2016	21/01/16	2	1	
31.	Tutorial-II	30-01-2016	30/01/16			
32.		01-02-2016	01/02/16			
33.		02-02-2016	02/02/16			
34.	MID - I EXAMS	03-02-2016	03/02/16			
35.		04-02-2016	04/02/16			
36.		06-02-2016	06/02/16			
<b>UNIT -III: LINUX INTERNALS</b>						
37.	Linux Kernel Structures	08-02-2016	08/02/16	2	1	1,3,5,7
38.	System Calls	09-02-2016	09/02/16	2	1	
39.	File Sub-System	10-02-2016	10/02/16	2	1	
40.	Process Sub-System	11-02-2016	11/02/16	2	1	
41.	Linux Signals	15-02-2016	13/02/16	2	1	
42.	Clock & Timers	16-02-2016	15/02/16	2	1	
43.	Memory Management	17-02-2016	16/02/16	2	1	
44.	Character And Block Devices	18-02-2016	18/02/16	2	1	
45.	Polling And Interrupts	20-02-2016	20/02/16	2	1	
46.	Hardware	22-02-2016	22/02/16	2	1	
47.	Implementing A Driver	23-02-2016	23/02/16	2	1	
48.	Dma Operation	24-02-2016	24/02/16	2	1	
49.	Examples Of Dma Operation	25-02-2016	01/03/16	2	1	
50.	Tutorial-III	27-02-2016	02/03/16			

UNIT -IV: NETWORK IMPLEMENTATION						
51.	Import Structures	29-02-2016	03.03.16	2	1	1,3,5,7
52.	Network Devices Under Linux	01-03-2016	04/03/16	2	1	
53.	Network Devices Under Linux	02-03-2016	05/03/16	2	1	
54.	Address Resolution Protocol	03-03-2016	09/03/16	2	1	
55.	IP	05-03-2016	10/03/16	2	1	
56.	UDP	08-03-2016	12/03/16	2	1	
57.	TCP	09-03-2016	14/03/16	2	1	
58.	Modules	10-03-2016	15/03/16	2	1	
59.	Modules implementation in kernel	14-03-2016	16/03/16	2	1	
60.	Parameter Passing	15-03-2016	17/03/16	2	1	
61.	Kernel Daemon	16-03-2016	19/03/16	2	1	
62.	Example module	17-03-2016	21.03.16	2	1	
63.	Debugging	19-03-2016	25.03.16	2	1	
64.	Example Module Debugging	21-03-2016	30.03.16	2	1	
65.	Tutorial-IV	22-03-2016	-			
UNIT -V: MULTI-PROCESSING						
66.	Intel Multi Processor	23-03-2016	30.03.16	2	1	1,3,5,7
67.	Processor Specifications	24-03-2016	02.04.16	2	1	
68.	Processor Specifications	26-03-2016	02.04.16	2	1	
69.	Advantages With Multi Processor	28-03-2016	04.04.16	2	1	
70.	Disadvantages With Processor	29-03-2016	04.04.16	2	1	
71.	Change To The Kernel	30-03-2016	05.04.16	2	1	
72.	Change To The Kernel	31-03-2016	05.04.16	2	1	
73.	Compiling Linux Smp	02-04-2016	06.04.16	2	1	
74.	Compiling Linux Smp	04-04-2016	06.04.16	2	1	
75.	AWK Script	05-04-2016	7.04.16	2	1	
76.	AWK Script	06-04-2016	9.04.16	2	1	
77.	Tutorial-IV	07-04-2016		2	1	
78.	II MID EXAMS	11-04-2016	11/4/16			
79.		12-04-2016	12/4/16			
77		13-04-2016	13/4/16			
78		16-04-2016	16/4/16			
		18-04-2016	18/4/16			

Resources used:

#### TEXT BOOK

Linux Kernel Internals, M. Beck, H. Bome, et al, Pearson Education, Second Edition, 2001

#### REFERENCES

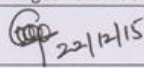
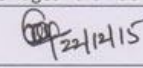
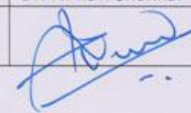
1. The Design of the UNIX Operating Systems, Maurice J. Bach, PHI, 1998
2. Operating System Concepts, Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Peter Baer Galvin, Wiley, John & Sons, 2004


**Assessment Summary:**

Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Unit	Course Outcomes					Programme Outcomes										
		1	2	3	4	5	a	b	c	d	e	f	g	h	i	j	k
T238	I	v						v	v		v				v		v
	II		v					v	v		v				v		v
	III			v				v	v		v				v		v
	IV				v			v	v		v				v		v
	V					v		v	v		v				v		v

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G.Nageswara Rao	GNageswara Rao		Dr. N. Ravi Shankar
Sign with Date	 22/12/15	 22/12/15		

	<b>LESSON PLAN</b>	<b>Date:</b> 30/11/2015 to 18/04/2016
	<b>Sub. Name : COMPILER DESIGN</b> <b>Branch: CSE, Semester &amp; Sections: VI &amp; A</b>	

### T141 – COMPILER DESIGN

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

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**UNIT – I**

**Overview of Compilation:** Phases of Compilation – Lexical Analysis, pass and Phases of translation, interpretation, bootstrapping, data structures in compilation – LEX lexical analyzer generator

**UNIT – II**

**Context Free grammars:** Context free grammars, derivation, parse trees, ambiguity grammars

**Top down Parsing:** Top down parsing – Backtracking, LL (1), recursive descent parsing, Predictive parsing, Preprocessing steps required for predictive parsing.

**UNIT – III**

**Bottom up parsing:** Shift Reduce parsing, LR and LALR parsing, Error recovery in parsing , handling ambiguous grammar, YACC – automatic parser generator .

**UNIT – IV**

**Semantic analysis:** Syntax directed translation, S-attributed and L-attributed grammars, Type checker. Intermediate code – abstract syntax tree, polish notation and three address codes , translation of simple statements and control flow statements

**Run time storage:** Storage organization, storage allocation strategies scope access to now local names, parameters, language facilities for dynamics storage allocation.



## UNIT – V

**Code optimization:** Consideration for Optimization, Scope of Optimization, local optimization, loop optimization, frequency reduction, folding, DAG representation.

**Code generation:** Machine dependent code generation, object code forms, generic code generation algorithm, Register allocation and assignment. Using DAG representation of Block.

## TEXT BOOK

Compilers Principles, Techniques and Tools Aho, Ullman, Ravisethi, Pearson Education.

## REFERENCES

1. Modern Compiler Construction in C , Andrew W.Appel Cambridge University Press.
2. Compiler Construction, LOUDEN, Thomson.

**Pre requisite:** knowledge in Theory of Computation.

### **Course Educational Objectives:**

- To introduce the major concept areas of language translation and compiler design.
- To enrich the knowledge in various phases of compiler ant its use, code optimization techniques, machine code generation, and use of symbol table.
- To extend the knowledge of parser by parsing LL parser and LR parser.
- To provide practical programming skills necessary for constructing a compiler.

### **Course Outcomes: After completion of this course a student can able to**

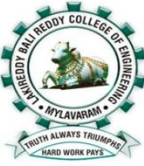
CO1: Understand the functioning of a Compiler & design a Scanner using Finite Automata and LEX.

CO2: Understand Context free grammar concepts & design a Parser for a given grammar using Top-down parsing.

CO3: Design a Parser for a given grammar using Bottom-up parsing & YACC.

CO4: Understand storage organization concepts and design a framework for translation of statements, type checking and generating Intermediate code.

CO5: Understand and apply various Optimization techniques, Code generation techniques on given Intermediate code.

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	Academic year: 2015-16	Course: Compiler Design
	Programme: B.Tech	Unit No: 1 to 5
	Year & Sem: III & II (VI sem)	Section: A

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

#### Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT -I: OVERVIEW OF COMPILATION</b>						
1	Introduction	30/11/15		2	1	1,3,5,7
2	Phases of Compilation	02/12/15		2	1	
3	Phases of Compilation	03/12/15		2	1	
4	Pass & Phase, Interpretation	04/12/15		2	1	
5	Lexical Analysis	05/12/15		2	1	
6	Lexical Analysis –input buffering	07/12/15		2	1,9	
7	Regular expressions and Transition diagrams	09/12/15		2	1,9	
8	<b>Tutorial - 1</b>	10/12/15				
9	Conversion of Regular Expr to Finite Automata	11/12/15		2	1,9	

10	Conversion of Regular Expr to Finite Automata	14/12/15		2	1	
11	Bootstrapping	16/12/15		2	1	
12	Data Structures in Compilation	17/12/15		2	1	
	LEX Tool	18/12/15		2	1,9	
13	<b>LEX Tool</b>	19/12/15				
14	<b>Tutorial - 2</b>	21/12/15				
<b>UNIT –II: Context Free Grammars &amp; Top down Parsing</b>						
15	Context Free Grammars	23/12/15		2	1	1,3,5,7
16	Derivation & Parse Trees	26/12/15		2	1,9	
17	Left Recursion and Left Factoring	28/12/15				
18	Ambiguity	30/01/16		2	1,9	
19	Elimination of Ambiguity	31/01/16		2	1,9	
20	<b>Tutorial - 3</b>	02/01/16				
21	Top down Parsing	18/01/16		2	1	
22	Back Tracking	20/01/16		2	1	
22	Recursive Descent Parsing	21/01/16		2	1	
23	Pre processing Steps required for PP	22/01/16		2	1	
24	First & Follow	23/01/16		2	1,9	
25	First & Follow	25/01/16		2	1,9	
26	Predictive Parsing	27/01/16		2	1	
27	LL(1)	28/01/16		2	1,9	
29	LL(1)	29/01/16		2	1,9	
30	<b>Tutorial - IV</b>	30/01/16		2		
31	MID – I EXAMS	01/02/16				
32		02/02/16				
33		03/02/16				
34		04/02/16				
35		06/02/16				
<b>UNIT –III: Bottom up Parsing</b>						
36	Introduction	31/01/16		2	1	

37	Shift Reduce Parsing	08/02/16		2	1	1,3,5,7
38	Shift Reduce Parsing	09/02/16		2	1,9	
39	LR parsing	10/02/16		2	1	
40	SLR	11/02/16		2	1	
41	SLR	15/02/16		2	1,9	
42	<b>Tutorial - 5</b>	16/02/16				
43	CLR	17/02/16		2	1	
44	CLR	18/02/16		2	1,9	
45	LALR	20/02/16		2	1	
46	LALR	22/02/16		2	1	
47	Error recovery in parsing	23/02/16		2	1,9	
48	Handling Ambiguous grammar	24/02/16		2	1	
49	YACC	25/02/16				
50	<b>Tutorial - 6</b>	27/02/16				
<b>UNIT –IV: Semantic Analysis &amp; Run time Storage</b>						
51	Syntax directed Translation	29/02/16		2	1,2	1,3,5,7
52	Syntax directed Definition	01/03/16		2	1,2	
53	S-attributed and L-attributed grammars	02/03/16		2	1,2	
54	Translation Schemes	03/03/16		2	1,2	
55	Type checking	05/03/16		2	1,2	
56	Intermediate code – abstract syntax tree, polish notation, Three address codes	08/03/16		2	1,2	
57	Three address codes	09/03/16		2	1,2	
58	Translation of simple statements and control flow statements	10/03/16		2	1,2	
59	<b>Tutorial –7</b>	14/03/16				
60	Run time storage: Storage Organization	15/03/16		2	1,2	
61	Storage allocation strategies	16/03/16		2	1,2	
62	Scope access to local names, parameters	17/03/16		2	1,2	
63	Language facilities for dynamics storage allocation	19/03/16		2	1,2	
<b>UNIT –V: Code Optimization &amp; Code Generation</b>						
64	Code Optimization: Introduction	21/03/16		2	1,2	

65	Principle sources of optimization	22/03/16		2	1,2	1,3,5,7
66	Scope, Local & Loop optimization	23/03/16		2	1,2	
67	Frequency reduction, Folding	24/03/16		2	1,2	
68	DAG representation	26/03/16		2	1,2	
69	Code generation: Introduction	28/03/16		2	1,2	
70	Machine dependent code generation	29/03/16		2	1,2	
71	Object code forms	30/03/16		2	1,2	
72	Generic code generation algorithm	31/03/16		2	1,2	
73	Register allocation & assignment	02/04/16		2	1,2	
74	DAG representation of basic block	04/04/16		2	1,2	
75	Peephole optimization	06/04/16		2	1,2	
76	<b>Tutorial – 8</b>	07/04/16				
77		11/04/16				
78	II MID EXAMS	12/04/16				
79		13/04/16				
80		16/04/16				
81		18/04/16				

Resources Used:

**Text Book:**

Compilers Principles, Techniques and Tools Aho, Ullman, Ravisethi, Pearson Education.

**References:**

1. Modern Compiler Construction in C, Andrew W.Appel Cambridge University Press.
2. Compiler Construction, LOUDEN, Thomson.

**Assessment Summary:**


Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5
Assignments	--					

Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Unit	Course Outcomes					Programme Outcomes										
		1	2	3	4	5	a	b	c	d	e	f	g	h	i	j	k
T141	I	×						×	×		×				×		×
	II		×					×	×		×				×		×
	III			×				×	×		×				×		×
	IV				×			×	×		×				×		×
	V					×		×	×		×				×		×

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	L V Krishna Rao	D.Veeriah		Dr. N. Ravi Shankar
Sign with Date				

	<b>LESSON PLAN</b> <b>COMPUTER GRAPHICS</b>	<b>Date: 30/11/2015</b>  <b>To</b> <b>18/04/2016</b>
	<b>Branch: CSE</b>	

### CS6054– COMPUTER GRAPHICS

**Lecture: 4 Periods/week**

**Internal Marks: 25**

**Tutorial : 1**

**External Marks: 75**

**Credits : 4**

**External**

**Examination: 3 Hrs**

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#### UNIT - I

**Introduction:** Usage of Graphics and their applications, Presentation Graphics-Computer Aided Design-Computer Art- Entertainment- Education and Training-Visualization- Image Processing- Graphical User Interfaces. Over view of Graphics systems: Video Display Devices- Raster Scan systems-random scan systems-Graphics monitors and workstations-Input devices.

#### UNIT - II

**Output primitives:** Points and Lines-Line Drawing Algorithms- Loading the Frame buffer- Line function-Circle- Generating Algorithms- Ellipse Generating Algorithms-Other Curves- Parallel Curve Algorithms-Curve Functions-Pixel Addressing- Filled Area Primitives-Filled Area Functions.

#### UNIT - III

Two Dimensional Geometric Transformations: Basic Transformations- Matrix Representations - Homogeneous Coordinates - Composite Transformations - Other Transformations-Transformations between Coordinate Systems - Affine Transformations-Transformation Functions- Raster methods for Transformation.

#### UNIT - IV

Two Dimensional Viewing: The viewing Pipeline-Viewing Coordinate Reference Frame-Window-to-Viewport Coordinate Transformation-Two Dimensional Viewing Functions-Clipping Operations-Point Clipping-Line Clipping-Polygon Clipping.

#### UNIT - V

Three Dimensional Concepts and Object representations: 3D display methods-3DGraphics-Polygon Surfaces- Curved Lines and Surfaces- Quadratic Surfaces, Three Dimensional Geometric and Modeling



Transformations: Translation-Rotation-scaling-Other Transformations-Composite Transformations-3D Transformation Functions-Modeling and Coordinate Transformations.

### **TEXT BOOK**

1. Donald Hearn & M. Pauline Baker, “Computer Graphics C Version”, Pearson Education, New Delhi, 2004 (Chapters 1 to 12 except 10-9 to 10-22 of the Text book)

### **REFERENCES**

1. David F. Rogers; “Procedural Elements for Computer Graphics”; TMH
2. J. D. Foley, S. K Feiner, A Van Dam F. H John; “Computer Graphics: Principles & Practice in C”; Pearson
3. Francis S Hill Jr; “Computer Graphics using Open GL”; Pearson Education, 2004.

**Prerequisite:** Fundamentals of C Programming, Vector Geometry and Vector Algebra

### **Course Educational Objectives:**

- Student will understand the mechanism behind the image display on the screen.
- An understanding about mathematical foundations on various multi dimensional image transformations.
- An understanding into the procedure which is used to display the real world objects on a limited screen environment without losing generality.

**COURSE OUTCOMES:** After the completion of the course, students should be able to


**CO1:** Understand the working principle of Display Devices and Graphics applications

**CO2:** Analyze Line, Circle, Ellipse and various character generation algorithms.

**CO3:** Implementation of 2D Geometric Transformation Techniques.

**CO4:** Design various methods to display a real world object on a 2D screen.

**CO5:** Apply various projection & transformation techniques for 3D objects.

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	Academic year: 2015-16	Course: Computer Graphics
	Programme: B.Tech	Unit No: 1 to 5
	Year & Sem: III & II (VI sem)	Section: B

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

Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT-I</b>						
1	<b>Introduction:</b> Usage of Graphics and their applications	30/11/15		2	1	1,3,5,7
2	Presentation Graphics-Computer Aided Design Computer Art- Entertainment	01/12/15		2	1	
3	Education and Training	02/12/15		2	1	
4	Visualization- Image Processing- Graphical User Interfaces.	03/12/15		2	1	
5	<b>Over view of Graphics systems:</b> Video Display Devices	05/12/15		2	1	

6	<b>Over view of Graphics systems:</b> Video Display Devices <b>Assignment - 1/ Tutorial -1</b>	07/12/15		2	1,9	
7	Raster Scan Displays, Random Scan Displays, Color CRT Monitors	08/12/15		2	1,9	
8	Raster Scan Displays, Random Scan Displays, Color CRT Monitors	09/12/15		2	1,9	
9	DVST, Flat Panel Display	10/12/15		2	1	
10	Raster Scan Systems, Random Scan Systems	14/12/15		2	1	
11	Graphics monitors and workstations-Input devices. Hard Copy Devices	15/12/15		2	1	
12	Graphics monitors and workstations-Input devices. Hard Copy Devices	16/12/15		2	1,9	
13	<b>Assignment – 2 / Tutorial -2</b>	17/12/15				
<b>UNIT-II</b>						
14	<b>Output primitives:</b> Points and Lines	19/12/15		2	1	
15	<b>Line Drawing Algorithms :</b> DDA Algorithm, Example	21/12/15		2	1,9	
16	<b>Line Drawing Algorithms :</b> Bresenham's Line Algorithm	22/12/15		2	1,9	
17	<b>Line Drawing Algorithms :</b> Bresenham's Line Algorithm, Example	23/12/15		2	1,9	
18	Loading Frame Buffer, Line Function	26/12/15		2	1	
19	Circle Generating Algorithms	18/01/16		2	1	1,3,5,7
20	Ellipse Generating Algorithms	19/01/16		2	1	
21	<b>Assignment /Tutorial - 3</b>	20/01/16		2	1	
22	Other Curves, Parallel Curve Algorithms	21/01/16		2	1,9	
23	Curve Functions-Pixel Addressing-	23/01/16		2	1,9	
24	Filled Area Primitives	25/01/16		2	1	
25	Filled Area Primitives.	27/01/16		2	1,9	
26	Filled Area Primitives & Functions.	28/01/16		2	1,9	
27	<b>Assignment /Tutorial-4</b>	30/01/16				
28		01/02/16				
29	MID – I EXAMS	02/02/16				
30		03/02/16				

31		04/02/16				
32		06/02/16				
<b>UNIT-III</b>						
34	<b>Two Dimensional Geometric Transformations: Basic Transformations</b>	08/02/16		2	1	1,3,5,7
35	Matrix Representations - Homogeneous Coordinates	09/02/16		2	1	
36	Composite Transformations	10/02/16		2	1,9	
37	Composite Transformations	11/02/16		2	1	
38	<b>Assignment /Tutorial - 5</b>	15/02/16		2	1	
39	Other Transformations	16/02/16		2	1,9	
40	Transformations between Coordinate Systems	17/02/16				
41	Transformations between Coordinate Systems	18/02/16		2	1	
42	Transformations between Coordinate Systems	20/02/16		2	1,9	
43	Affine Transformations-Transformation Functions	22/02/16		2	1	
44	Affine Transformations-Transformation Functions	23/02/16		2	1	
45	Raster methods for Transformation	24/02/16		2	1,9	
46	Raster methods for Transformation.	25/02/16		2	1	
47	<b>Assignment /Tutorial - 6</b>	27/02/16				
<b>UNIT-IV</b>						
48	<b>Two Dimensional Viewing: The viewing Pipeline</b>	29/02/16		2	1,2	1,3,5,7
49	Viewing Coordinate Reference Frame-Window-to-Viewport Coordinate Transformation	01/03/16		2	1,2	
50	Two Dimensional Viewing Functions	02/03/16		2	1,2	
51	Clipping Operations-Point Clipping	03/03/16		2	1,2	
52	Line Clipping-	05/03/16		2	1,2	
53	Line Clipping-	08/03/16		2	1,2	
54	Line Clipping-	09/03/16		2	1,2	

55	<b>Assignment /Tutorial - 7</b>	10/03/16		2	1,2	
56	Polygon Clipping	14/03/16				
57	Polygon Clipping	15/03/16		2	1,2	
58	Polygon Clipping	16/03/16		2	1,2	
59	<b>Assignment /Tutorial - 8</b>	17/03/16				
60	<b>Review of UNIT-III &amp; UNIT 4</b>	19/03/16		2	1,2	
<b>UNIT-V</b>						
61	<b>Three Dimensional Concepts and Object representations:</b> 3D display methods-3DGraphics-Polygon Surfaces	21/03/16		2	1,2	
62	Curved Lines and Surfaces	22/03/16		2	1,2	
63	Quadratic Surfaces	23/03/16		2	1,2	
64	Quadratic Surfaces	24/03/16		2	1,2	
65	<b>Three Dimensional Geometric and Modeling Transformations:</b> Translation-Rotation-scaling	26/03/16		2	1,2	
66	Translation-Rotation-scaling	28/03/16		2	1,2	
67	Other Transformations	29/03/16		2	1,2	
68	Other Transformations	30/03/16		2	1,2	
69	Other Transformations	31/03/16		2	1,2	
70	<b>Assignment /Tutorial - 9</b>	02/04/16		2	1,2	
71	Composite Transformations-	04/04/16		2	1,2	
72	Composite Transformations-	06/04/16		2	1,2	
73	3D Transformation Functions	07/04/16		2	1,2	
74	Modeling and Coordinate Transformations. <b>Assignment /Tutorial - 10</b>	11/04/16		2	1,2	
75	<b>II MID EXAMS</b>	12/04/16				
76		13/04/16				
77		16/04/16				
78		18/04/16				

1,3,5,7


Resources Used:



CS6054	I	×						×	×		×				×		×
	II		×					×	×		×				×		×
	III			×				×	×		×				×		×
	IV				×			×	×		×				×		×
	V					×		×	×		×				×		×

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G.V.Suresh	G.V.Suresh		Dr. N. Ravi Shankar
Sign with Date				



	<b>LESSON PLAN</b> <b>COMPUTER GRAPHICS</b>	<b>Date: 30/11/2015</b>  <b>To</b> <b>18/04/2015</b>
	<b>Branch: CSE</b>	

### CS6054– COMPUTER GRAPHICS

**Lecture: 4 Periods/week**

**Internal Marks: 25**

**Tutorial : 1**

**External Marks: 75**

**Credits : 4**

**External**

**Examination: 3 Hrs**

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#### UNIT - I

**Introduction:** Usage of Graphics and their applications, Presentation Graphics-Computer Aided Design-Computer Art- Entertainment- Education and Training-Visualization- Image Processing- Graphical User Interfaces. Over view of Graphics systems: Video Display Devices- Raster Scan systems-random scan systems-Graphics monitors and workstations-Input devices.

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**Output primitives:** Points and Lines-Line Drawing Algorithms- Loading the Frame buffer- Line function-Circle- Generating Algorithms- Ellipse Generating Algorithms-Other Curves- Parallel Curve Algorithms-Curve Functions-Pixel Addressing- Filled Area Primitives-Filled Area Functions.

#### UNIT - III

Two Dimensional Geometric Transformations: Basic Transformations- Matrix Representations - Homogeneous Coordinates - Composite Transformations - Other Transformations-Transformations between Coordinate Systems - Affine Transformations-Transformation Functions- Raster methods for Transformation.

#### UNIT - IV

Two Dimensional Viewing: The viewing Pipeline-Viewing Coordinate Reference Frame-Window-to-Viewport Coordinate Transformation-Two Dimensional Viewing Functions-Clipping Operations-Point Clipping-Line Clipping-Polygon Clipping.

#### UNIT - V

Three Dimensional Concepts and Object representations: 3D display methods-3DGraphics-Polygon Surfaces- Curved Lines and Surfaces- Quadratic Surfaces, Three Dimensional Geometric and Modeling

Transformations: Translation-Rotation-scaling-Other Transformations-Composite Transformations-3D Transformation Functions-Modeling and Coordinate Transformations.

### **TEXT BOOK**

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### **REFERENCES**

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2. J. D. Foley, S. K Feiner, A Van Dam F. H John; “Computer Graphics: Principles & Practice in C”; Pearson
3. Francis S Hill Jr; “Computer Graphics using Open GL”; Pearson Education, 2004.

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**CO3:** Implementation of 2D Geometric Transformation Techniques.

**CO4:** Design various methods to display a real world object on a 2D screen.

**CO5:** Apply various projection & transformation techniques for 3D objects.

	<b>LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING</b>	
	<b>DEPARTMENT OF CSE</b>	
	<b>OUTCOME BASED LESSON PLAN</b>	
	Academic year: 2015-16	Course: Computer Graphics
	Programme: B.Tech	Unit No: 1 to 5
	Year & Sem: III & II (VI sem)	Section: A

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

#### Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT-I</b>						
1	<b>Introduction:</b> Usage of Graphics and their applications	30/11/15		2	1	1,3,5,7
2	Presentation Graphics-Computer Aided Design Computer Art- Entertainment	01/12/15		2	1	
3	Education and Training	02/12/15		2	1	
4	Visualization- Image Processing- Graphical User Interfaces.	03/12/15		2	1	
5	<b>Over view of Graphics systems:</b> Video Display Devices	05/12/15		2	1	
6	<b>Assignment - 1/ Tutorial -1</b>	07/12/15		2	1,9	

7	Raster Scan Displays, Random Scan Displays	08/12/15		2	1,9		
8	Color CRT Monitors	09/12/15		2	1,9		
9	DVST, Flat Panel Display	10/12/15		2	1		
10	Raster Scan Systems, Random Scan Systems	14/12/15		2	1		
11	Graphics monitors and workstations-	15/12/15		2	1		
12	Input devices. Hard Copy Devices	16/12/15		2	1,9		
13	<b>Assignment – 2 / Tutorial -2</b>	17/12/15					
<b>UNIT-II</b>							
14	<b>Output primitives:</b> Points and Lines	19/12/15		2	1		
15	<b>Line Drawing Algorithms :</b> DDA Algorithm, Example	21/12/15		2	1,9		
16	<b>Line Drawing Algorithms :</b> Bresenham's Line Algorithm	22/12/15		2	1,9		
17	<b>Line Drawing Algorithms :</b> Bresenham's Line Algorithm, Example	23/12/15		2	1,9		
18	Loading Frame Buffer, Line Function	26/12/15		2	1		
19	Circle Generating Algorithms	18/01/16		2	1	1,3,5,7	
20	Ellipse Generating Algorithms	19/01/16		2	1		
21	<b>Assignment /Tutorial - 3</b>	20/01/16		2	1		
22	Other Curves, Parallel Curve Algorithms	21/01/16		2	1,9		
23	Curve Functions-Pixel Addressing-	23/01/16		2	1,9		
24	Filled Area Primitives	25/01/16		2	1		
25	Filled Area Primitives.	27/01/16		2	1,9		
26	Filled Area Primitives & Functions.	28/01/16		2	1,9		
27	<b>Assignment /Tutorial-4</b>	30/01/16					
28	<b>MID – I EXAMS</b>	01/02/16					
29		02/02/16					
30		03/02/16					
31		04/02/16					
32		06/02/16					
<b>UNIT-III</b>							

34	<b>Two Dimensional Geometric Transformations: Basic Transformations</b>	08/02/16		2	1	1,3,5,7	
35	Matrix Representations - Homogeneous Coordinates	09/02/16		2	1		
36	Composite Transformations	10/02/16		2	1,9		
37	Composite Transformations	11/02/16		2	1		
38	<b>Assignment /Tutorial - 5</b>	15/02/16		2	1		
39	Other Transformations	16/02/16		2	1,9		
40	Transformations between Coordinate Systems	17/02/16					
41	Transformations between Coordinate Systems	18/02/16		2	1		
42	Transformations between Coordinate Systems	20/02/16		2	1,9		
43	Affine Transformations-Transformation Functions	22/02/16		2	1		
44	Affine Transformations-Transformation Functions	23/02/16		2	1		
45	Raster methods for Transformation	24/02/16		2	1,9		
46	Raster methods for Transformation.	25/02/16		2	1		
47	<b>Assignment /Tutorial - 6</b>	27/02/16					
<b>UNIT-IV</b>							
48	<b>Two Dimensional Viewing: The viewing Pipeline</b>	29/02/16		2	1,2		1,3,5,7
49	Viewing Coordinate Reference Frame-Window-to-Viewport Coordinate Transformation	01/03/16		2	1,2		
50	Two Dimensional Viewing Functions	02/03/16		2	1,2		
51	Clipping Operations-Point Clipping	03/03/16		2	1,2		
52	Line Clipping-	05/03/16		2	1,2		
53	Line Clipping-	08/03/16		2	1,2		
54	Line Clipping-	09/03/16		2	1,2		
55	<b>Assignment /Tutorial - 7</b>	10/03/16		2	1,2		
56	Polygon Clipping	14/03/16					
57	Polygon Clipping	15/03/16		2	1,2		

58	Polygon Clipping	16/03/16		2	1,2	
59	<b>Assignment /Tutorial - 8</b>	17/03/16				
60	<b>Review of UNIT-III &amp; UNIT 4</b>	19/03/16		2	1,2	
<b>UNIT-V</b>						
61	<b>Three Dimensional Concepts and Object representations:</b> 3D display methods-3DGraphics-Polygon Surfaces	21/03/16		2	1,2	1,3,5,7
62	Curved Lines and Surfaces	22/03/16		2	1,2	
63	Quadratic Surfaces	23/03/16		2	1,2	
64	Quadratic Surfaces	24/03/16		2	1,2	
65	<b>Three Dimensional Geometric and Modeling Transformations:</b> Translation-Rotation-scaling	26/03/16		2	1,2	
66	Translation-Rotation-scaling	28/03/16		2	1,2	
67	Other Transformations	29/03/16		2	1,2	
68	Other Transformations	30/03/16		2	1,2	
69	Other Transformations	31/03/16		2	1,2	
70	<b>Assignment /Tutorial - 9</b>	02/04/16		2	1,2	
71	Composite Transformations-	04/04/16		2	1,2	
72	Composite Transformations-	06/04/16		2	1,2	
73	3D Transformation Functions	07/04/16		2	1,2	
74	Modeling and Coordinate Transformations. <b>Assignment /Tutorial - 10</b>	11/04/16		2	1,2	
75	<b>II MID EXAMS</b>	12/04/16				
76		13/04/16				
77		16/04/16				
78		18/04/16				

Resources Used:

**Text Book:**

Donald Hearn & M. Pauline Baker, "Computer Graphics C Version", Pearson Education, New Delhi, 2004 (Chapters 1 to 12 except 10-9 to 10-22 of the Text book)


**References:**





CS6054	I	×						×	×		×				×		×
	II		×					×	×		×				×		×
	III			×				×	×		×				×		×
	IV				×			×	×		×				×		×
	V					×		×	×		×				×		×

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	Dr. N. Ravi Shankar	Dr. N. Ravi Shankar	Dr. Ch. Venkata Narayana	Dr. N. Ravi Shankar
Sign with Date				

	<b>LESSON PLAN</b>	<b>Date:</b> 30/11/2015
	<b>Sub. Name : COMPUTER NETWORKS</b> <b>Branch: CSE, Semester &amp; Sections: VI &amp; A</b>	<b>To 18/04/2016</b>

### T314 – COMPUTER NETWORKS

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

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#### **UNIT - I**

Introduction: Use of Computer Networks- Network Hardware- Network software-Reference models Example Networks- Network Standardization. Physical Layer: The theoretical basis for Data communication- Guided Transmission Media.

#### **UNIT - II**

Data link layer: design issues- framing, error detection and correction, CRC, Elementary data link protocols- sliding window protocols. Medium Access Control Sub layer: Channel allocation problem- multiple access protocols- Ethernet- Data link layer switching.

#### **UNIT – III**

Network layer: Network layer design issues- Routing algorithms- congestion control algorithms- Quality of service- Internetworking- network layer in the Internet.

#### **UNIT - IV**

Transport layer: Transport service- Elements of transport protocols- Internet transport protocols: TCP & UDP.

#### **UNIT - V**

Application Layer: Domain Name System- Electronic Mail -the World Wide Web, Network Security.

#### **TEXT BOOK**

Andrews S. Tanenbaum; "Computer Networks"; Fourth Edition, PHI.

## **REFERENCES**

1. William Stallings; "Data and Computer Communications"; seventh Edition, Pearson Education.
2. Behrouz A .Fourouzan; "TCP/IP Protocol Suite"; Fourth Edition, Tata-McGraw Hill.
3. James F.Kurose, Keith W.ROSS; "Computer Networking - A Top-Down Approach featuring the Internet"; Pearson Education.

**Pre requisite:** Fundamentals of computer.

## **Course Educational Objectives:**

- Give students an understanding of the basic principles of computer networking
- Give students an overview of the main technologies used in computer networks.
- Give students an overview of internetworking principles and how the Internet protocols, routing, and applications operate.
- Give students the basic background in computer networks that will allow them to practice in this field, and that will form the foundation for more advanced courses in networking.

## **Course Outcomes: After completion of this course a student can able to**

CO1: Understand the concepts of various network architectures, physical media, channel access techniques.


CO2: Interpret data link layer and medium access protocols for direct link networks.

CO3: Analyze and implement internetworking and routing algorithms

CO4: Visualize adaptive flow control, adaptive retransmission and congestion avoidance mechanisms in TCP.

CO5: Understand various applications like email, DNS,SNMP and PGP.

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	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	Academic year: 2015-16	Course: Computer Networks
	Programme: B.Tech	Unit No: 1 to 5
	Year & Sem: III & II (VI sem)	Section: A

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

#### Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT –I: INTRODUCTION AND PHYSICAL LAYER</b>						
1	<b>Introduction</b> Use of Computer Networks	30/11/15		2	1	1,3,5,7
2	Network Hardware	02/12/15		2	1	
3	Network Hardware	03/12/15		2	1	
4	Network Software	04/12/15		2	1	
5	Network Software	05/12/15		2	1	
6	Reference models	07/12/15		2	1,9	
7	Reference models	09/12/15		2	1,9	
8	Example Networks	10/12/15		2	1,9	
9	Example Networks	11/12/15		2	1	

10	Network Standardization	14/12/15		2	1		
11	<b>Physical Layer</b> : The theoretical basis for Data communication	15/12/15		2	1		
12	Guided Transmission Media	16/12/15		2	1,9		
13	<b>Tutorial - I</b>	17/12/15					
<b>UNIT –II: Data Link Layer</b>							
14	<b>Data link layer:</b> design issues framing	18/12/15		2	1	1,3,5,7	
15	Error detection and correction	19/12/15		2	1,9		
16	CRC	21/12/15		2	1,9		
17	Elementary data link protocols	23/12/15		2	1,9		
18	Sliding Window Protocols	26/12/15		2	1		
19	Medium Access Control Sub layer	18/01/16		2	1		
20	Channel allocation problem	20/01/16		2	1		
21	Multiple Access Protocols	21/01/16		2	1		
22	Ethernet	22/01/16		2	1,9		
23	Data link layer switching	23/01/16		2	1,9		
24	<b>Data link layer:</b> design issues framing	25/01/16		2	1		
25	Error detection and correction	27/01/16		2	1,9		
26	CRC	28/01/16		2	1,9		
27	<b>Tutorial - II</b>	30/01/16					
29	MID – I EXAMS	01/02/16					
30		02/02/16					
31		03/02/16					
32		04/02/16					
33		06/02/16					
<b>UNIT –III: Network Layer</b>							
34	Network layer design issues	08/02/16		2	1	1,3,5,7	

35	Network layer design issues	09/02/16		2	1	
36	Routing algorithms	10/02/16		2	1,9	
37	Routing algorithms	11/02/16		2	1	
38	Routing algorithms	15/02/16		2	1	
39	Congestion control algorithms	16/02/16		2	1,9	
40	Congestion control algorithms	17/02/16				
41	Quality of service	18/02/16		2	1	
42	Quality of service	20/02/16		2	1,9	
43	Internetworking	22/02/16		2	1	
44	Internetworking	23/02/16		2	1	
45	Network layer in the Internet	24/02/16		2	1,9	
46	Network layer in the Internet	25/02/16		2	1	
47	<b>Tutorial – III</b>	27/02/16				
<b>UNIT –IV: Transport Layer</b>						
48	Transport service	29/02/16		2	1,2	1,3,5,7
49	Transport service	01/03/16		2	1,2	
50	Transport service	02/03/16		2	1,2	
51	Elements of transport protocols	03/03/16		2	1,2	
52	Elements of transport protocols	05/03/16		2	1,2	
53	Elements of transport protocols	08/03/16		2	1,2	
54	Internet transport protocols	09/03/16		2	1,2	
55	Internet transport protocols	10/03/16		2	1,2	
56	<b>Tutorial –IV</b>	14/03/16				
57	TCP & UDP	15/03/16		2	1,2	
58	TCP & UDP	16/03/16		2	1,2	
59	TCP & UDP	17/03/16		2	1,2	
60	TCP & UDP	19/03/16		2	1,2	
<b>UNIT –V: Application Layer</b>						
61	Application Layer	21/03/16		2	1,2	1,3,5,7

62	Application Layer	22/03/16		2	1,2
63	Domain Name System	23/03/16		2	1,2
64	Domain Name System	24/03/16		2	1,2
65	Electronic Mail	26/03/16		2	1,2
66	Electronic Mail	28/03/16		2	1,2
67	World Wide Web	29/03/16		2	1,2
68	World Wide Web	30/03/16		2	1,2
69	World Wide Web	31/03/16		2	1,2
70	Network Security	02/04/16		2	1,2
71	Network Security	04/04/16		2	1,2
72		06/04/16		2	1,2
73	<b>Tutorial – V</b>	07/04/16			
74	<b>Tutorial – VI</b>	11/04/16			
75	II MID EXAMS	12/04/16			
76		13/04/16			
77		16/04/16			
78		18/04/16			

Resources Used:

**Text Book:**

Andrews S. Tanenbaum; “Computer Networks”; Fourth Edition, PHI.

**References:**

1. William Stallings; “Data and Computer Communications”; seventh Edition, Pearson Education.
2. Behrouz A .Fourouzan; “TCP/IP Protocol Suite”; Fourth Edition, Tata-McGraw Hill.
3. James F.Kurose, Keith W.ROSS; “Computer Networking - A Top-Down Approach featuring the Internet”; Pearson Education.

**Assessment Summary:**

Assessment Task	Weight age	Course Outcomes
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	(Marks)	CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Unit	Course Outcomes					Programme Outcomes										
		1	2	3	4	5	a	b	c	d	e	f	g	h	i	j	k
T141	I	×						×	×		×				×		×
	II		×					×	×		×				×		×
	III			×				×	×		×				×		×
	IV				×			×	×		×				×		×
	V					×		×	×		×				×		×

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	K.N.Prasanthi			Dr. N. Ravi Shankar
Sign with Date				

	<b>LESSON PLAN</b>	<b>Date:</b> 30/11/2015
	<b>Sub. Name : COMPUTER NETWORKS</b> <b>Branch: CSE, Semester &amp; Sections: VI &amp; B</b>	<b>To 18/04/2016</b>

### T314 – COMPUTER NETWORKS

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

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#### UNIT - I

Introduction: Use of Computer Networks- Network Hardware- Network software-Reference models Example Networks- Network Standardization. Physical Layer: The theoretical basis for Data communication- Guided Transmission Media.

#### UNIT - II

Data link layer: design issues- framing, error detection and correction, CRC, Elementary data link protocols- sliding window protocols. Medium Access Control Sub layer: Channel allocation problem- multiple access protocols- Ethernet- Data link layer switching.

#### UNIT – III

Network layer: Network layer design issues- Routing algorithms- congestion control algorithms- Quality of service- Internetworking- network layer in the Internet.

#### UNIT - IV

Transport layer: Transport service- Elements of transport protocols- Internet transport protocols: TCP & UDP.

#### UNIT - V

Application Layer: Domain Name System- Electronic Mail -the World Wide Web, Network Security.

#### TEXT BOOK

Andrews S. Tanenbaum; "Computer Networks"; Fourth Edition, PHI.

## **REFERENCES**

1. William Stallings; "Data and Computer Communications"; seventh Edition, Pearson Education.
2. Behrouz A .Fourouzan; "TCP/IP Protocol Suite"; Fourth Edition, Tata-McGraw Hill.
3. James F.Kurose, Keith W.ROSS; "Computer Networking - A Top-Down Approach featuring the Internet"; Pearson Education.

**Pre requisite:** Fundamentals of computer.

## **Course Educational Objectives:**

- Give students an understanding of the basic principles of computer networking
- Give students an overview of the main technologies used in computer networks.
- Give students an overview of internetworking principles and how the Internet protocols, routing, and applications operate.
- Give students the basic background in computer networks that will allow them to practice in this field, and that will form the foundation for more advanced courses in networking.

**Course Outcomes:**

**After completion of this course a student can able to**

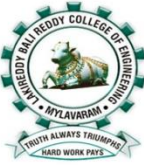
**CO1:** Understand the concepts of various network architectures, physical media, channel access techniques.

**CO2:** Interpret data link layer and medium access protocols for direct link networks.

**CO3:** Analyze and implement internetworking and routing algorithms

**CO4:** Visualize adaptive flow control, adaptive retransmission and congestion avoidance mechanisms in TCP.

**CO5:** Understand various applications like email, DNS,SNMP and PGP.

	<b>Lakireddy Bali Reddy College of Engineering</b>	
	<b>Department of CSE</b>	
	<b>Outcome based lesson plan</b>	
	Academic year: 2015-16	Course: Computer Networks
	Programme: B.Tech	Unit No: 1 to 5
	Year & Sem: III & II (VI sem)	Section: A

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

#### Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT –I: INTRODUCTION AND PHYSICAL LAYER</b>						
1	<b>Introduction</b> Use of Computer Networks	30/11/15		2	1	1,3,5,7
2	Network Hardware	02/12/15		2	1	
3	Network Hardware	03/12/15		2	1	
4	Network Software	04/12/15		2	1	
5	Network Software	05/12/15		2	1	
6	Reference models	07/12/15		2	1,9	
7	Reference models	09/12/15		2	1,9	
8	Example Networks	10/12/15		2	1,9	
9	Example Networks	11/12/15		2	1	

10	Network Standardization	14/12/15		2	1		
11	<b>Physical Layer</b> : The theoretical basis for Data communication	15/12/15		2	1		
12	Guided Transmission Media	16/12/15		2	1,9		
13	<b>Tutorial - I</b>	17/12/15					
<b>UNIT –II: Data Link Layer</b>							
14	<b>Data link layer:</b> design issues framing	18/12/15		2	1	1,3,5,7	
15	Error detection and correction	19/12/15		2	1,9		
16	CRC	21/12/15		2	1,9		
17	Elementary data link protocols	23/12/15		2	1,9		
18	Sliding Window Protocols	26/12/15		2	1		
19	Medium Access Control Sub layer	18/01/16		2	1		
20	Channel allocation problem	20/01/16		2	1		
21	Multiple Access Protocols	21/01/16		2	1		
22	Ethernet	22/01/16		2	1,9		
23	Data link layer switching	23/01/16		2	1,9		
24	<b>Data link layer:</b> design issues framing	25/01/16		2	1		
25	Error detection and correction	27/01/16		2	1,9		
26	CRC	28/01/16		2	1,9		
27	<b>Tutorial - II</b>	30/01/16					
29	MID – I EXAMS	01/02/16					
30		02/02/16					
31		03/02/16					
32		04/02/16					
33		06/02/16					
<b>UNIT –III: Network Layer</b>							
34	Network layer design issues	08/02/16		2	1	1,3,5,7	

35	Network layer design issues	09/02/16		2	1	
36	Routing algorithms	10/02/16		2	1,9	
37	Routing algorithms	11/02/16		2	1	
38	Routing algorithms	15/02/16		2	1	
39	Congestion control algorithms	16/02/16		2	1,9	
40	Congestion control algorithms	17/02/16				
41	Quality of service	18/02/16		2	1	
42	Quality of service	20/02/16		2	1,9	
43	Internetworking	22/02/16		2	1	
44	Internetworking	23/02/16		2	1	
45	Network layer in the Internet	24/02/16		2	1,9	
46	Network layer in the Internet	25/02/16		2	1	
47	<b>Tutorial – III</b>	27/02/16				
<b>UNIT –IV: Transport Layer</b>						
48	Transport service	29/02/16		2	1,2	1,3,5,7
49	Transport service	01/03/16		2	1,2	
50	Transport service	02/03/16		2	1,2	
51	Elements of transport protocols	03/03/16		2	1,2	
52	Elements of transport protocols	05/03/16		2	1,2	
53	Elements of transport protocols	08/03/16		2	1,2	
54	Internet transport protocols	09/03/16		2	1,2	
55	Internet transport protocols	10/03/16		2	1,2	
56	<b>Tutorial –IV</b>	14/03/16				
57	TCP & UDP	15/03/16		2	1,2	
58	TCP & UDP	16/03/16		2	1,2	
59	TCP & UDP	17/03/16		2	1,2	
60	TCP & UDP	19/03/16		2	1,2	
<b>UNIT –V: Application Layer</b>						
61	Application Layer	21/03/16		2	1,2	1,3,5,7

62	Application Layer	22/03/16		2	1,2
63	Domain Name System	23/03/16		2	1,2
64	Domain Name System	24/03/16		2	1,2
65	Electronic Mail	26/03/16		2	1,2
66	Electronic Mail	28/03/16		2	1,2
67	World Wide Web	29/03/16		2	1,2
68	World Wide Web	30/03/16		2	1,2
69	World Wide Web	31/03/16		2	1,2
70	Network Security	02/04/16		2	1,2
71	Network Security	04/04/16		2	1,2
72		06/04/16		2	1,2
73	<b>Tutorial – V</b>	07/04/16			
74	<b>Tutorial – VI</b>	11/04/16			
75	II MID EXAMS	12/04/16			
76		13/04/16			
77		16/04/16			
78		18/04/16			

Resources Used:

**Text Book:**

Andrews S. Tanenbaum; “Computer Networks”; Fourth Edition, PHI.

**References:**

1. William Stallings; “Data and Computer Communications”; seventh Edition, Pearson Education.
2. Behrouz A .Fourouzan; “TCP/IP Protocol Suite”; Fourth Edition, Tata-McGraw Hill.
3. James F.Kurose, Keith W.ROSS; “Computer Networking - A Top-Down Approach featuring the Internet”; Pearson Education.

**Assessment Summary:**

Assessment Task	Weight age	Course Outcomes
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	(Marks)	CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with PO's & PSO's:**

POs	PO1	2	3	4	5	6	7	8	9	10	11	12	PSO1	2	3	4	5	6
<b>CO1</b>	<b>1</b>																<b>3</b>	<b>1</b>
<b>CO2</b>	<b>1</b>																<b>3</b>	
<b>CO3</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>1</b>									<b>1</b>				<b>3</b>	
<b>CO4</b>	<b>1</b>	<b>3</b>	<b>2</b>	<b>1</b>									<b>1</b>				<b>3</b>	
<b>CO5</b>	<b>1</b>					<b>1</b>											<b>3</b>	

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G Balu Narasimharao			Dr. N. Ravi Shankar
Sign with Date				

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
<b>UNIT-I: Human Values</b>					
1.	29-01-2016	Introduction about Values		1	DM1
2.	30-01	Morals ethics and Values		1	DM1
3.	03-02	Integrity Work ethics		1	DM1
4.	05-02	Service Learning		1	DM1
5.	06-02	Civic Virtue		1	DM1
6.	10-02	Respect for others ,Living peacefully		1	DM1
7.	12-02	Caring, Sharing ,Honesty,Courage		1	DM1
8.	13-02	Valuing time Cooperation, Commitment		1	DM1
9.	17-02	Empathy, Self confidence character, Spirituality		1	DM1
10	19-02	Review the entire unit		1	DM1
<b>Unit-II: Engineering Ethics</b>					
11	20-02	Introduction about engineering ethics		1	DM1
12	24-02	Senses of engineering ethics		1	DM1
13	26-02	Variety of moral issued		1	DM1
14	27-02	Moral dilemmas moral autonomy		1	DM1
15	02-03	Kohlberg's theory		1	DM1
16	04-03	Gilligan theory		1	DM1
17	05-03	Comparison of Kohlberg's theory and Gilligan theory			DM1
18	09-03	Consensus and controversy		1	DM1
19	11-03	Models of professional roles about right action self interest		1	DM1
20	12-03	Customs and religion uses of ethical theories		1	DM1
21	18-03	Customs and religion uses of ethical theories			DM1
22	19-03	Engineering as experimentation introduction			DM1
23	28-03	Professional roles		1	DM1
24	30-03	Customs and religion uses of ethical theories		1	DM1
25	01-04	Ethical theories		1	DM1
26	02-04	Code of ethics - sample		1	DM1
27	06-04	Engineering as experimentation introduction		1	DM1
28	13-04	Engineering Projects VS. Standard Experiments			DM1
29	16-04	Engineers as responsible experimenters			DM1
30	19-04	Codes of ethics - Industrial Standards			DM1
31	20-04	Introduction about Safety, and rights		1	DM1
32	20-04	Safety and risk		1	DM1
33	22-04	Assessment of safety and risk		1	DM1
34	23-04	Risk benefit analysis and reducing risk		1	DM1
35	29-04	Three Mile Island and Chernobyl case study		1	DM1
36	30-04	Three Mile Island and Chernobyl case study		1	DM1
37	03-05	Collegiality and loyalty		1	DM1

38	05-05	Respect for authority, collective bargaining		1	DM1
39	06-05	Confidentiality- Conflicts of interest		1	DM1
40	07-05	<b>Unit –V GLOBAL ISSUES-</b> sample code of Ethics		1	DM1
41	12-05	Multinational Corporation's- Environmental ethics- computer ethics		1	DM1
42	01-06	Engineers as managers consulting engineers			DM1
43	08-06	engineers as expert witnesses and advisors Moral leadership		1	DM1
44	10-06	Internals		1	DM1
45	15-06	Internals		1	DM1
<b>Total number of classes available as per Schedule</b>				<b>45</b>	

**Faculty Signature  
signature**

**Head of the dept.**

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
<b>UNIT-I: Human Values</b>					
46	29-01-2016	Introduction about Values		1	DM1
47	29-01	Morals ethics and Values		1	DM1
48	01-02	Integrity Work ethics		1	DM1
49	05-02	Service Learning		1	DM1
50	06-02	Civic Virtue		1	DM1
51	08-02	Respect for others ,Living peacefully		1	DM1
52	12-02	Caring, Sharing ,Honesty,Courage		1	DM1
53	13-02	Valuing time Cooperation, Commitment		1	DM1
54	15-02	Empathy, Self confidence character, Spirituality		1	DM1
55	19-02	Review the entire unit		1	DM1
<b>Unit-II: Engineering Ethics</b>					
56	20-02	Introduction about engineering ethics		1	DM1
57	22-02	Senses of engineering ethics		1	DM1
58	25-02	Variety of moral issued		1	DM1
59	26-02	Moral dilemmas moral autonomy		1	DM1
60	27-02	Kohlberg's theory		1	DM1
61	29-02	Gilligan theory		1	DM1
62	04-03	Comparison of Kohlberg's theory and Gilligan theory		1	DM1
63	05-03	Consensus and controversy		1	DM1
64	11-03	Models of professional roles about right action self interest		1	DM1
65	12-03	Customs and religion uses of ethical theories		1	DM1
66	14-03	Customs and religion uses of ethical theories		1	DM1
67	15-03	Engineering as experimentation introduction		1	DM1
68	19-03	Professional roles		1	DM1
69	21-03	Customs and religion uses of ethical theories		1	DM1
70	28-03	Ethical theories		1	DM1
71	01-04	Code of ethics - sample		1	DM1
72	02-04	Engineering as experimentation introduction		1	DM1
73	04-04	Engineering Projects VS. Standard Experiments		1	DM1
74	11-04	Engineers as responsible experimenters		1	DM1
75	16-04	Codes of ethics - Industrial Standards		1	DM1
76	18-04	Introduction about Safety, and rights		1	DM1
77	20-04	Safety and risk		1	DM1
78	21-04	UNIT- V- Multinational companies		1	DM1
79	22-04	Environmental ethics		1	DM1
80	25-04	sample code of Ethics		1	DM1
81	07-05	advisors Moral leadership		1	DM1
82	03-06	Engineers as managers consulting engineers		1	DM1

83	04-06	engineers as expert witnesses		1	DM1
84	06-06	engineers as expert witnesses		1	DM1
85	10-06	Internals		1	DM1
86	13-06	Internals		1	DM1
<b>Total number of classes available as per Schedule</b>				<b>41</b>	

**Faculty Signature  
signature**

**Head of the dept.**



**P881 – WEB TECHNOLOGIES LAB.**

<b>Lab. : 3 Periods/week</b>	<b>Internal Marks : 25</b>
<b>Tutorial:</b>	<b>External Marks : 75</b>
<b>Credits: 2</b>	<b>External Examination : 3 Hrs</b>

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**S. No.**

**Program(s) - SYLLABUS**

- 1 Design the following static webpages required for an online book store website.  
Homepage  
Login Page  
Catalogue Page
- 2 Design the following static webpages required for an online book store website.  
Cart Page  
Registration Page
- 3 Design a webpage using CSS which includes the following styles.  
Using different font, styles  
Set a back ground image for both page and single elements on the page  
Control the background repetition of image with background repeat property  
Define styles for link as visited, active, hover & link  
Work with layers  
Add a customized cursor
- 4 Write a JavaScript to validate the fields of a registration page.
- 5 Create an XML document for maintaining a CD catalog  
Display XML document data using HTML  
Display XML data using XSL
- 6 Write a program to create a Java Bean for user login management component
- 7 Write program to Install Apache Tomcat Web Server and deploy a static website & Access it.  
Install Apache Tomcat Server on port number 8080  
Deploy html pages in a webserver  
Access static website from a webserver
- 8 Write a program to create a Servlet to AUTHENTICATE user details
- 9 Write a program to implement session management concept in Servlets
- 10 Write a program to access a database using JDBC & Servlets

- 11 Write a Program to print multiplication table for any number upto required level using JSP
- 12 Write a program to display user credentials using useBean tag of JSP

**Pre-requisites:**

- Students should have a good knowledge in Java Programming Language

**Course Educational Objectives(CEOs):**

*To make a student familiar with :*

- Creation of static web pages with HTML & dynamic web pages with HTML, JavaScript & CSS, XML
- Design and develop various types of websites using various client side , server side components using Servlets and JSP
- Design and develop 3 tier applications and various web components and Database accessing with JDBC Concepts
- Have knowledge in Framework like struts & EJB's

**Course Outcomes(COs):**

*By the completion of the course, the students are able to:*

**CO1:** Design various types of web pages such as static and dynamic by applying various components like CSS, JavaScript etc., over HTML

**CO2:** Apply, design and deployment of websites in web servers and able to implement JDBC concepts for data driven applications as well as various technologies like Servlets, JSP, etc.,

S.No	Teaching Learning Process (TLP)	Delivery Methods (DM)	Assessment Methods (AM)
1	Solving Real world problem	Chalk & Talk	Assignments
2	Explaining application before theory	ICT tools	Quiz
3	Solving problems	Group discussions	Tutorials
4	Designing of experiments	Industrial visit	Surprise Tests
5	Problems on environmental, economics, health & safety	Field work	Mid Exams
6	Problems on professional & ethics	Case studies	Model Exam



7	Seminar	Mini Projects	QAs
8	Problems using software	Numerical treatment	
9	Self study	Design / Exercises	

### Detailed Lesson Plan

S.NO	PROGRAM(S) TO BE EXECUTED	Date		TLP	DM	AM
		Tentative	Actual			
<b>CYCLE-1</b>						
1	SAMPLE HTML PAGES DESIGN	01.12.2015		8	9	1,3,5,7
2	SAMPLE HTML PAGES DESIGN	08.12.2015		8	9	
3	Design the following static webpages required for an online book store website. Homepage Login Page Catalogue Page	15.12.2015		8	9	
4	Design the following static webpages required for an online book store website. Cart Page Registration Page	22.12.2015		8	9	
5	Design a webpage using CSS which includes the following styles. Using different font, styles Set a background image for both page and single elements on the page Control the background repetition of image with background repeat property	29.12.2015		8	9	
6	Define styles for link as visited, active, hover & link Work with layers , Add a customized cursor	05.01.2016		8	9	
7	Write a JavaScript to validate the fields of a registration page.	19.01.2016		8	9	
8	Create an XML document for maintaining a CD catalog Display XML document data using HTML Display XML data using XSL	09.02.2016		8	9	
9	Create an XML document for maintaining a CD catalog Display XML	16.02.2016		8	9	

	document data using HTML Display XML data using XSL				
<b>CYCLE-2</b>					
10	Write a program to create a Java Bean for user login management component	23.02.2016		8	9
11	Write program to Install Apache Tomcat Web Server and deploy a static website & Access it. Install Apache Tomcat Server on port number 8080 Deploy html pages in a webserver Access static website from a webserver	01.03.2016		8	
12	Write a program to create a Servlet to AUTHENTICATE user details	08.03.2016		8	9
13	Write a program to implement session management concept in Servlets	15.03.2016		8	9
14	Write a program to access a database using JDBC & Servlets	22.03.2016		8	9
15	Write a Program to print multiplication table for any number upto required level using JSP	29.03.2016		8	9
16	Write a program to display user credentials using useBean tag of JSP	05.04.2016		8	9
17	Internal Exam	12.04.2016		8	9
18	Practical End Exam	19.04.2016		8	9

### Assessment Summary:

Assessment Task	Weight age (Marks)		
		CO1	CO2
Assignments	--		



	<b>Instructor</b>	<b>Course Coordinator</b>	<b>Module Coordinator</b>	<b>HOD</b>
Name	A.Raja Gopal			Dr. N. Ravi Shankar
Sign with Date	03-11-2015			03-11-2015

**P881 – WEB TECHNOLOGIES LAB.**

<b>Lab.</b>	<b>: 3 Periods/week</b>	<b>Internal Marks</b>	<b>: 25</b>
<b>Tutorial</b>	<b>:</b>	<b>External Marks</b>	<b>: 75</b>
<b>Credits</b>	<b>: 2</b>	<b>External Examination</b>	<b>: 3 Hrs</b>

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<u>S. No.</u>	<u>Program(s)</u>
1	Design the following static webpages required for an online book store website. Homepage Login Page Catalogue Page
2	Design the following static webpages required for an online book store website. Cart Page Registration Page
3	Design a webpage using CSS which includes the following styles. Using different font, styles Set a back ground image for both page and single elements on the page Control the background repetition of image with background repeat property Define styles for link as visited, active, hover & link Work with layers Add a customized cursor
4	Write a JavaScript to validate the fields of a registration page.
5	Create an XML document for maintaining a CD catalog Display XML document data using HTML Display XML data using XSL
6	Write a program to create a Java Bean for user login management component
7	Write program to Install Apache Tomcat Web Server and deploy a static website & Access it. Install Apache Tomcat Server on port number 8080 Deploy html pages in a webserver Access static website from a webserver
8	Write a program to create a Servlet to AUTHENTICATE user details
9	Write a program to implement session management concept in Servlets
10	Write a program to access a database using JDBC & Servlets
11	Write a Program to print multiplication table for any number upto required level using JSP

12 Write a program to display user credentials using useBean tag of JSP

**Pre-requisites:**

- Students should have a good knowledge in Java Programming Language

**Course Educational Objectives(CEOs):**

*To make a student familiar with :*

- Creation of static web pages with HTML & dynamic web pages with HTML, JavaScript & CSS, XML
- Design and develop various types of websites using various client side , server side components using Servlets and JSP
- Design and develop 3 tier applications and various web components and Database accessing with JDBC Concepts
- Have knowledge in Framework like struts & EJB's

**Course Outcomes(COs):**

*By the completion of the course, the students are able to:*

**CO1:** Design various types of web pages such as static and dynamic by applying various components like CSS, JavaScript etc., over HTML

**CO2:** Apply, design and deployment of websites in web servers and able to implement JDBC concepts for data driven applications as well as various technologies like Servlets, JSP, etc.,

Session No	Program to be executed	Date	Remarks
1	SAMPLE HTML PAGES DESIGN	02.12.2015	
2	SAMPLE HTML PAGES DESIGN	09.12.2015	
3	Design the following static webpages required for an online book store website.	16.12.2015	

	Homepage Login Page Catalogue Page		<b>Cycle-1</b>
4	Design the following static webpages required for an online book store website. Cart Page Registration Page	23.12.2015	
5	Design the following static webpages required for an online book store website. Cart Page Registration Page	30.12.2015	
6	Design a webpage using CSS which includes the following styles. Using different font, styles Set a back ground image for both page and single elements on the page Control the background repetition of image with background repeat property	06.01.2016	
7	Define styles for link as visited, active, hover & link Work with layers , Add a customized cursor	20.01.2016	
8	Write a JavaScript to validate the fields of a registration page.	27.01.2016	
9	Write a JavaScript to validate the fields of a registration page.	03.02.2016	
10	Create an XML document for maintaining a CD catalog Display XML document data using HTML Display XML data using XSL	10.02.2016	
11	Create an XML document for maintaining a CD catalog Display XML document data using HTML Display XML data using XSL	17.02.2016	
12	Write a program to create a Java Bean for user login management component	24.02.2016	
13	Write program to Install Apache Tomcat Web Server and deploy a static website & Access it. Install Apache Tomcat Server on port number 8080 Deploy html pages in a webserver Access static website from a webserver	02.03.2016	
14	Write a program to create a Servlet to AUTHENTICATE user details	09.03.2016	

15	Write a program to implement session management concept in Servlets	16.03.2016	<b>Cycle-2</b>
16	Write a program to access a database using JDBC & Servlets	23.03.2016	
17	Write a Program to print multiplication table for any number upto required level using JSP	30.03.2016	
18	Write a program to display user credentials using useBean tag of JSP	06.04.2016	
19	Internal Exam	13.04.2016	
20	Practical End Exam	20.04.2016	

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

**Assessment Summary:**

Assessment Task	Weight age (Marks)		
		CO1	CO2



Assignments	--		
Quizzes	--		
Tutorials	--		
Surprise Tests	--		
Mid Exams	20		
Model Exams	--		
End Exam	75		
Attendance	05		
Total	100		

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Unit	Course Outcomes					Programme Outcomes										
		1	2	3	4	5	a	B	c	d	e	f	g	h	i	j	k
T-340	I	x							x	x		x		x			
	II		x					X	x			x		x			
	III			x						x		x		x	x		
	IV				x									x			
	V					x		X						x	x	x	

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G.V.Rajya Lakshmi			Dr. N. Ravi Shankar
Sign with Date				

## T340 – WEB TECHNOLOGIES

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

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### UNIT - I

**HTML Common tags-** List, Tables, images, links, forms, Frames; Cascading Style sheets; Introduction to Java Scripts, Objects in Java Script, Dynamic HTML with Java Script

### UNIT - II

**XML:** Document type definition, XML Schemas, Document Object model, Presenting XML, Using XML Processors: DOM and SAX. **Java Beans:** Introduction to Java Beans, Advantages of Java Beans, Persistence, Java Beans API, Introduction to EJB's.

### UNIT - III

**Servlets:** Introduction to Servlets: Lifecycle of a Servlet, The Servlet API, The javax.serveletPackage, Servlet parameters, Initialization parameters. The javax.serveletHTTP package, Http Request & Responses, Cookies- Session Tracking, Security Issues.

### UNIT - IV

**Introduction to JSP:** Introduction to JSP, Components of JSP, Implicit objects. Conditional Processing – Displaying Values Using an Expression to Set an Attribute, Declaring Variables and Methods Error Handling and Debugging Sharing Data between JSP.

### UNIT - V

**Database Access:** Database Programming using JDBC, Javax.sql.\* package, Accessing a Database from a JSP Page, Application – Specific Database Actions, Deploying JAVA Beans in a JSP Page.

**Struts Framework:** Introduction to Struts, Overview of MVC Design Pattern, Struts main Components, Controller components (Action Servlet, Request Processor, Action, Action Mapping, Action Form Beans, Struts Configuration files.

### TEXT BOOK

Web Programming, building internet applications, Chris Bates 2nd edition, WILEY Dreamtech.(UNITS-1,2,3,4)

## **REFERENCES**

1. Jakarta Struts Cookbook , Bill Siggelkow, S P D O'Reilly (UNIT-5)
2. Programming world wide web-Sebesta, Pearson
3. Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES By Marty - Hall and Larry Brown Pearson
4. Internet and World Wide Web – How to program by Dietel and Nieto PHI/Pearson Education Asia.
5. Programming world wide web-Sebesta,Pearson Java Server Pages, Pekowsky, Pearson.

### **Pre-requisites:**

- Students should have a good knowledge in Java Programming Language

### **Course Educational Objectives(CEOs):**

*To make a student familiar with :*

- Creation of static web pages with HTML & dynamic web pages with HTML, JavaScript & CSS, XML
- Design and develop various types of websites using various client side , server side components using Servlets and JSP
- Design and develop 3 tier applications and various web components and Database accessing with JDBC Concepts
- Have knowledge in Framework like struts & EJB's

## WEB TECHNOLOGIES(WT)

### **Course Outcomes(COs):**

*By the completion of the course, the students are able to:*

**CO1:** Understand, Analyze and create WebPages using languages like HTML,DHTML,CSS and JavaScript.

**CO2:** Understand, Analyze XML schema and create XML documents and Java Beans.

**CO3:** Use server side components like Servlets to build dynamic websites.

**CO4:** Create websites using server side components like JSP and differentiate Servlets and JSP.

**CO5:** Design and construct various data base tables using JDBC and produce various results based on given query and exposed to Struts Framework

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

### Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT –I: HTML, CSS, JAVASCRIPT,DHTML</b>						
1	Introduction & Fundamentals	30-11-2015		2	1	1,3,5,7
2	Web Architecture – Basics	01-12-2015		2	1	
3	<b>Introduction to HTML</b>	02-12-2015		2	1	
4	HTML Tags – Basics	03-12-2015		2	1	
5	HTML Tags: Lists, Entity References Tags	04-12-2015		2	1	
6	Table Tags & Attributes, Examples	05-12-2015		2	1,9	
7	Image Tag & Attributes, Examples	07-12-2015		2	1,9	

8	Links- Internal & External – Framesets Introduction	08-12-2015		2	1,9	
9	Framesets - Nested Frames, Targets	09-12-2015		2	1	
10	Various Form Elements	10-12-2015		2	1	
11	<b>Cascading Style sheets</b> - Explanation, Importance, Basics	11-12-2015		2	1	
12	Cascading Style sheets- Types & Usage & Layers	14-12-2015		2	1,9	
13	Some Example Programs	15-12-2015		2		
14	<b>Introduction to Java Scripts</b>	16-12-2015		2		
15	Linking of javascripts with HTML	17-12-2015		2		
16	Explanation of Various functions and events in javascript	18-12-2015		2		
17	Sample programs of Various functions in javascript	19-12-2015		2		
18	Sample programs of Various events in javascript	21-12-2015		2		
19	Introduction to Objects in Java Script	22-12-2015		2		
20	Usage of Objects in Java Script	23-12-2015		2		
21	Validation with java script	26-12-2015		2		
22	Dynamic HTML with Java Script	28-12-2015		2		
23	Example java script programs	29-12-2015		2		
<b>UNIT –II: XML</b>						
24	<b>XML Fundamentals</b>	29-12-2015		2	1	1,3,5,7

25	Anatomy of Basic XML program	30-12-2015		2	1,9
26	Presenting XML	31-12-2015		2	1,9
27	Well formedness and Validity of an XML	02-01-2016		2	1,9
	<b>CRT Classes</b>	04-01-2016 TO 09-01-2016			
	<b>Pongal Vacation</b>	11-01-2016 TO 16-01-2016			
28	Creation of XML programs	18-01-2016		2	1
29	Sample programs on XML	19-01-2016		2	1
30	Document type definition (DTD)	20-01-2016		2	1
31	XML Schemas	21-01-2016		2	1
32	Document Object model (DOM)	22-01-2016		2	1,9
33	Using XML Processors: DOM and SAX	23-01-2016		2	1,9
34	<b>Java Beans : Introduction to Java Beans</b>	25-01-2016		2	1
35	Advantages of Java Beans	27-01-2016		2	1,9
36	Java Beans API	28-01-2016		2	1,9

37	Introduction to EJB's	29-01-2016		2		
38	Types of EJB's	30-01-2016		2		
	<b>I-MID Exams</b>	01-02-2016 TO 06-02-2016				
<b>UNIT –III: SERVLETS</b>						
39	<b>Introduction to Web Servers and Servlets</b>	08-02-2016		2	1	
40	Introduction to Servlets, Lifecycle of a Servlet	09-02-2016		2	1	
41	JSDK, The Servlet API	10-02-2016		2	1,9	
42	The javax.servelet Package	11-02-2016		2	1	
43	Reading Servlet parameters	12-02-2016		2	1	1,3,5,7
44	Reading Initialization parameters	15-02-2016		2	1,9	
45	The javax.servelet HTTP package	16-02-2016		2		
46	Http Request & Responses	17-02-2016		2		
47	Http Request & Responses	18-02-2016		2	1	
48	Session Tracking : Cookies	19-02-2016		2		
49	Session Tracking : Cookies	20-02-2016		2	1,2	1,3,5,7
50	Security Issues	22-02-2016		2	1,2	



UNIT –IV: JSP					
51	Introduction to JSP	23-02-2016		2	
52	Generating Dynamic Content	24-02-2016		2	1,2
53	Components of JSP	25-02-2016		2	1,2
54	Components of JSP	26-02-2016		2	1,2
55	Implicit JSP Objects	27-02-2016		2	1,2
56	Implicit JSP Objects	29-02-2016		2	1,2
57	Conditional Processing – Displaying Values	01-03-2016		2	1,2
58	Conditional Processing – Displaying Values	02-03-2016			
59	Expression to Set an Attribute	03-03-2016		2	1,2
60	Declaring Variables and Methods	04-03-2016		2	1,2
61	Error Handling and Debugging	05-03-2016		2	1,2
62	Sharing Data Between JSP pages	08-03-2016		2	1,2
63	Sharing Data Between JSP pages	09-03-2016		2	1,2
64	Requests, and Users Passing Control and Date between Pages	10-03-2016		2	1,2
65	Requests, and Users Passing Control and Date between Pages	11-03-2016		2	1,2
66	Sharing Session and Application Data	14-03-2016		2	1,2
67	Memory Usage Considerations	15-03-2016		2	1,2
68	Some small applications in jsp	16-03-2016		2	1,2

1,3,  
5,7

69	Review of JSP	17-03-2016		2	1,2
70	Review of JSP	18-03-2016			
<b>UNIT –V: JDBC</b>					
71	<b>Introduction to Database Access</b>	19-03-2016		2	
72	Database Programming using JDBC	21-03-2016		2	
73	Javax.sql.* package,	22-03-2016		2	
74	JDBC Statements,	23-03-2016		2	
75	JDBC Statements,	24-03-2016		2	
76	JDBC Statements,	26-03-2016		2	
77	Accessing a Database from a JSP Page,	27-03-2016		2	
78	Application	28-03-2016		2	
79	Specific Database Actions,	29-03-2016		2	
80	Specific Database Actions,	30-03-2016		2	
81	Specific Database Actions,	31-03-2016		2	
82	Deploying JAVABeans in a JSP Page	01-04-2016		2	
83	Deploying JAVABeans in a JSP Page	02-04-2016		2	
84	<b>Introduction to struts framework</b>	04-04-2016		2	
85	Some small applications using JDBC	06-04-2016		2	

86	Application Development using various web components	07-04-2016		2	
87	Content Beyond Syllabus	11-04-2016		2	
88	Review of Paper	12-04-2016		2	
89	Old Question Papers Discussion	13-04-2016		2	
	<b>II-MID EXAMS</b>	16-04-2016 TO 18-04-2016			

### Resources Used:

#### Text Book:

Web Programming, building internet applications, Chris Bates 2nd edition, WILEY Dreamtech.(UNITS-1,2,3,4)

#### References:

1. Jakarta Struts Cookbook , Bill Siggelkow, S P D O'Reilly (UNIT-5)
2. Programming world wide web-Sebesta, Pearson
3. Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES By Marty - Hall and Larry Brown Pearson

### Assessment Summary:

Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5

Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Unit	Course Outcomes					Programme Outcomes										
		1	2	3	4	5	a	b	c	d	e	f	g	h	i	j	k
T-340	I	x							x	x		x		x			
	II		x					x	x			x		x			
	III			x						x		x		x	x		
	IV				x									x			
	V					x		x						x	x	x	

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	A.Raja Gopal			Dr. N. Ravi Shankar
Sign with Date	03-11-2015			03-11-2015

## T340 – WEB TECHNOLOGIES

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

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### UNIT - I

**HTML Common tags-** List, Tables, images, links, forms, Frames; Cascading Style sheets; Introduction to Java Scripts, Objects in Java Script, Dynamic HTML with Java Script

### UNIT - II

**XML:** Document type definition, XML Schemas, Document Object model, Presenting XML, Using XML Processors: DOM and SAX. **Java Beans:** Introduction to Java Beans, Advantages of Java Beans, Persistence, Java Beans API, Introduction to EJB's.

### UNIT - III

**Servlets:** Introduction to Servlets: Lifecycle of a Servlet, The Servlet API, The javax.serveletPackage, Servlet parameters, Initialization parameters. The javax.serveletHTTP package, Http Request & Responses, Cookies- Session Tracking, Security Issues.

### UNIT - IV

**Introduction to JSP:** Introduction to JSP, Components of JSP, Implicit objects. Conditional Processing – Displaying Values Using an Expression to Set an Attribute, Declaring Variables and Methods Error Handling and Debugging Sharing Data between JSP.

### UNIT - V

**Database Access:** Database Programming using JDBC, Javax.sql.\* package, Accessing a Database from a JSP Page, Application – Specific Database Actions, Deploying JAVA Beans in a JSP Page.

**Struts Framework:** Introduction to Struts, Overview of MVC Design Pattern, Struts main Components, Controller components (Action Servlet, Request Processor, Action, Action Mapping, Action Form Beans, Struts Configuration files.

### TEXT BOOK

Web Programming, building internet applications, Chris Bates 2nd edition, WILEY Dreamtech.(UNITS-1,2,3,4)

## **REFERENCES**

6. Jakarta Struts Cookbook , Bill Siggelkow, S P D O'Reilly (UNIT-5)
7. Programming world wide web-Sebesta, Pearson
8. Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES By Marty - Hall and Larry Brown Pearson
9. Internet and World Wide Web – How to program by Dietel and Nieto PHI/Pearson Education Asia.
10. Programming world wide web-Sebesta,Pearson Java Server Pages, Pekowsky, Pearson.

### **Pre-requisites:**

- Students should have a good knowledge in Java Programming Language

### **Course Educational Objectives(CEOs):**

*To make a student familiar with :*

- Creation of static web pages with HTML & dynamic web pages with HTML, JavaScript & CSS, XML
- Design and develop various types of websites using various client side , server side components using Servlets and JSP
- Design and develop 3 tier applications and various web components and Database accessing with JDBC Concepts
- Have knowledge in Framework like struts & EJB's

## WEB TECHNOLOGIES(WT)

### Course Outcomes(COs):

*By the completion of the course, the students are able to:*

**CO1:** Understand, Analyze and create WebPages using languages like HTML,DHTML,CSS and JavaScript.

**CO2:** Understand, Analyze XML schema and create XML documents and Java Beans.

**CO3:** Use server side components like Servlets to build dynamic websites.

**CO4:** Create websites using server side components like JSP and differentiate Servlets and JSP.

**CO5:** Design and construct various data base tables using JDBC and produce various results based on given query and exposed to Struts Framework

S.No	Teaching Learning Process (TLP)	Delivery Methods (DM)	Assessment Methods (AM)
1	Solving Real world problem	Chalk & Talk	Assignments
2	Explaining application before theory	ICT tools	Quiz
3	Solving problems	Group discussions	Tutorials
4	Designing of experiments	Industrial visit	Surprise Tests

5	Problems on environmental, economics, health & safety	Field work	Mid Exams
6	Problems on professional & ethics	Case studies	Model Exam
7	Seminar	Mini Projects	QAs
8	Problems using software	Numerical treatment	
9	Self study	Design / Exercises	

### Detailed Lesson Plan

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
<b>UNIT –I: HTML, CSS, JAVASCRIPT,DHTML</b>						
1	Introduction & Fundamentals	01-12-2015		2	1	1,3,5,7
2	Web Architecture – Basics	02-12-2015		2	1	
3	<b>Introduction to HTML</b>	03-12-2015		2	1	
4	HTML Tags – Basics	04-12-2015		2	1	
5	HTML Tags: Lists, Entity References Tags	05-12-2015		2	1	
6	Table Tags & Attributes, Examples	08-12-2015		2	1,9	
7	Image Tag & Attributes, Examples	09-12-2015		2	1,9	
8	Links- Internal & External – Framesets Introduction	10-12-2015		2	1,9	
9	Framesets - Nested Frames, Targets	11-12-2015		2	1	
10	Various Form Elements	12-12-2015		2	1	
11	<b>Cascading Style sheets-</b> Explanation, Importance, Basics	15-12-2015		2	1	
12	Cascading Style sheets- Types & Usage & Layers	15-12-2015		2	1,9	



13	Some Example Programs	16-12-2015		2		
14	<b>Introduction to Java Scripts</b>	17-12-2015		2		
15	Linking of javascripts with HTML	17-12-2015		2		
16	Explanation of Various functions and events in javascript	18-12-2015		2		
17	Sample programs of Various functions in javascript	19-12-2015		2		
18	Sample programs of Various events in javascript	22-12-2015		2		
19	Introduction to Objects in Java Script	23-12-2015		2		
20	Usage of Objects in Java Script	24-12-2015		2		
21	Validation with java script	24-12-2015		2		1,3,5,7
22	Dynamic HTML with Java Script	26-12-2015		2		
23	Example java script programs	28-12-2015		2		
<b>UNIT –II: XML</b>						
24	<b>XML Fundamentals</b>	29-12-2015		2	1	
25	Anatomy of Basic XML program	30-12-2015		2	1,9	
26	Presenting XML	31-12-2015		2	1,9	
27	Well formedness and Validity of an XML	02-01-2016		2	1,9	1,3,5,7
	<b>CRT Classes</b>	04-01-2016 TO 09-01-2016				

	<b>Pongal Vacation</b>	11-01-2016 TO 16-01-2016				
28	Creation of XML programs	19-01-2016		2	1	
29	Sample programs on XML	20-01-2016		2	1	
30	Document type definition (DTD)	21-01-2016		2	1	
31	XML Schemas	22-01-2016		2	1	
32	Document Object model (DOM)	23-01-2016		2	1,9	
33	Using XML Processors: DOM and SAX	23-01-2016		2	1,9	
34	<b>Java Beans : Introduction to Java Beans</b>	25-01-2016		2	1	
35	Advantages of Java Beans	27-01-2016		2	1,9	
36	Java Beans API	28-01-2016		2	1,9	
37	Introduction to EJB's	29-01-2016		2		
38	Types of EJB's	30-01-2016		2		
	<b>I-MID Exams</b>	01-02-2016 TO 06-02-2016				
<b>UNIT –III: SERVLETS</b>						
39	<b>Introduction to Web Servers and Servlets</b>	09-02-2016		2	1	1,3,5,7

40	Introduction to Servlets, Lifecycle of a Servlet	10-02-2016		2	1	
41	JSDK, The Servlet API	11-02-2016		2	1,9	
42	The javax.servelet Package	12-02-2016		2	1	
43	Reading Servlet parameters	13-02-2016		2	1	
44	Reading Initialization parameters	13-02-2016		2	1,9	
45	The javax.servelet HTTP package	16-02-2016		2		
46	Http Request & Responses	17-02-2016		2		
47	Http Request & Responses	18-02-2016		2	1	
48	Session Tracking : Cookies	19-02-2016		2		
49	Session Tracking : Cookies	20-02-2016		2	1,2	
50	Security Issues	20-02-2016		2	1,2	1,3,5,7
<b>UNIT-IV: JSP</b>						
51	<b>Introduction to JSP</b>	23-02-2016		2		
52	Generating Dynamic Content	24-02-2016		2	1,2	1,3,5,7
53	Components of JSP	25-02-2016		2	1,2	
54	Components of JSP	26-02-2016		2	1,2	

55	Implicit JSP Objects-syntax	27-02-2016		2	1,2	
56	Implicit JSP Objects-examples	27-02-2016		2	1,2	
57	Conditional Processing – Displaying Values	01-03-2016		2	1,2	
58	Conditional Processing – Displaying Values	02-03-2016				
59	Expression to Set an Attribute	03-03-2016		2	1,2	
60	Declaring Variables and Methods	04-03-2016		2	1,2	
61	Error Handling and Debugging	05-03-2016		2	1,2	
62	Sharing Data Between JSP pages	08-03-2016		2	1,2	
63	Sharing Data Between JSP pages	09-03-2016		2	1,2	
64	Requests, and Users Passing Control and Date between Pages	10-03-2016		2	1,2	
65	Requests, and Users Passing Control and Date between Pages	11-03-2016		2	1,2	1,3, 5,7
66	Sharing Session and Application Data	12-03-2016		2	1,2	
67	Memory Usage Considerations	15-03-2016		2	1,2	
68	Some small applications in jsp	16-03-2016		2	1,2	
69	Review of JSP	17-03-2016		2	1,2	
70	Review of JSP	18-03-2016				
<b>UNIT –V: JDBC</b>						
71	<b>Introduction to Database Access</b>	19-03-2016		2		1,3, 5,7

72	Database Programming using JDBC	22-03-2016		2		
73	Javax.sql.* package,	23-03-2016		2		
74	JDBC Statements,	24-03-2016		2		
75	JDBC Statements,	25-03-2016		2		
76	Accessing a Database from a JSP Page,	26-03-2016		2		
77	Examples on JSP pages with JDBC	26-03-2016		2		
78	Applications	29-03-2016		2		
79	Specific Database Actions,	29-03-2016		2		
80	Specific Database Actions,	30-03-2016		2		
81	Specific Database Actions,	31-03-2016		2		
82	Deploying JAVA Beans in a JSP Page	01-04-2016		2		
83	Deploying JAVA Beans in a JSP Page	02-04-2016		2		
84	<b>Introduction to struts framework</b>	05-04-2016		2		1,3,5,7
85	Some small applications using JDBC	06-04-2016		2		
86	Application Development using various web components	07-04-2016		2		
87	Content Beyond Syllabus	08-04-2016		2		
88	Review of Paper	09-04-2016		2		
89	Old Question Papers Discussion	09-04-2016		2		

		11-04-2016				
	II-MID EXAMS	TO				
		18-04-2016				

**Resources Used:**

**Text Book:**

Web Programming, building internet applications, Chris Bates 2nd edition, WILEY Dreamtech.(UNITS-1,2,3,4)

**References:**

4. Jakarta Struts Cookbook , Bill Siggelkow, S P D O'Reilly (UNIT-5)
5. Programming world wide web-Sebesta, Pearson
6. Core SERVLETS ANDJAVASERVER PAGES VOLUME 1: CORE TECHNOLOGIES By Marty - Hall and Larry Brown Pearson

**Assessment Summary:**

Assessment Task	Weight age (Marks)	Course Outcomes				
		CO1	CO2	CO3	CO4	CO5
Assignments	--					
Quizzes	--					
Tutorials	--					
Surprise Tests	--					
Mid Exams	20					
Model Exams	--					
End Exam	75					
Attendance	05					
Total	100					

**Mapping Course Outcomes with Programme Outcomes:**

Course Code	Unit	Course Outcomes					Programme Outcomes										
		1	2	3	4	5	a	b	c	d	e	f	g	h	i	j	k
T-340	I	x							x	x		x		x			
	II		x					x	x			x		x			
	III			x						x		x		x	x		
	IV				x									x			
	V					x		x						x	x	x	

	Instructor	Course Coordinator	Module Coordinator	HOD
Name	G.V.Rajya Lakshmi			Dr. N. Ravi Shankar
Sign with Date				