	SYLLABUS	Date:
	Subject Name : FOSS LAB (L148) **Faculty Name: A.Sudhakar** **Branch: CSE** **Class: III SEM** **Section: A & B**	**10-08-15** **To** **12-12-15**

Week – 1:

Session - 1

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

Session - 2

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.

Week – 2:

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.

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

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.

Week – 3:

Session - 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.

Session - 2

a) Write a sed command that deletes the first character in each line in a file.

b) Write a sed command that deletes the character before the last character in each line in a file.

c) Write a sed command that swaps the first and second words in each line in a file.

Week – 4:

a) Pipe your /etc/passwd file to awk, and print out the home directory of each user.

b) Develop an interactive grep script that asks for a word and a file name and then tells how many lines contain that word.

c) Repeat

d) Part using awk.

Week – 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.

c) Write a shell script that determines the period for which a specified user is working on the system.

Week – 6:

a) 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.

b) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.

Week – 7:

a) Write a shell script that computes the gross salary of a 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.

b) Write a shell script that accepts two integers as its arguments and computers the value of first number raised to the power of the second number.

Week – 8:

a) 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.

b) Write shell script that takes a login name as command – line argument and reports when that person logs in

c) 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.

Week – 9:

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.

Week – 10:

Write a C program that takes one or more file or directory names as command line input and reports the following information on the file:

i) File type
ii) Number of links
iii) Read, write and execute permissions
iv) Time of last access

(Note : Use stat/fstat system calls)

Week – 11:

Write C programs that simulate the following unix commands:

a) mv

b) cp

(Use system calls)

Write a C program that simulates ls Command

(Use system calls / directory API)

Week – 12:

Programs on R- Tool, Octave, SCI Lab.

	LESSON PLAN			Date: 10-08-15 To 12-12-15
	Sub. Name : FOSS LAB (L148) **Faculty Name: A.Sudhakar** **Branch: CSE** **Class: III SEM** **Section: A**			
No. of Periods	**Tentative Date**	**Actual Date**	**Lab Cycles**	**Signature**
1.	13/08/2015		Basics about UNIX	
2.	20/08/2015		UNIX Simple Commands	
3.	27/08/2015		WEEK – 1	
4.	03/09/2015		WEEK – 2	
5.	08/09/2015		WEEK – 3	
6.	15/09/2015		WEEK – 4	
7.	22/09/2015		WEEK – 5	
8.	29/09/2015		MID – 1 EXAMS	
9.	06/10/2015		WEEK – 6	
10.	13/10/2015		WEEK – 7	
11.	27/10/2015		WEEK – 8	
12.	03/11/2015		WEEK – 9	
13.	10/11/2015		WEEK – 10	
14.	17/11/2015		WEEK – 11	
15.	24/11/2015		WEEK – 12 (R – Tool and Octave)	
16.	01/12/2015		WEEK – 12 (PHP)	
17.	08/12/2015		WEEK 12 PHP	
18.	15/12/2015		INTERNAL EXAM	

	LESSON PLAN			Date:
	Sub. Name : FOSS LAB (L148) **Faculty Name: A.Sudhakar** **Branch: CSE** **Class: III SEM** **Section: B**			**10-08-15** **To** **12-12-15**
No. of Periods	**Tentative Date**	**Actual Date**	**Lab Cycles**	**Signature**
1.	10/08/2015		Basics about UNIX	
2.	17/06/2015		UNIX Simple Commands	
3.	24/08/2016		Basic Commands for LAB	
4.	31/08/2015		WEEK – 1	
5.	07/09/2015		WEEK – 2	
6.	14/09/2015		WEEK – 3	
7.	21/09/2015		WEEK – 4	
8.	05/10/2015		MID – 1 EXAMS	
9.	19/10/2015		WEEK – 5	
10.	26/10/2015		WEEK – 6	
11.	02/11/2015		WEEK – 7	
12.	09/11/2015		WEEK – 8	
13.	16/11/2015		WEEK – 9	
14.	23/11/2015		WEEK – 10	
15.	30/11/2015		WEEK – 11	
16.	08/12/2015		Internal lab	

RESOURCES USED:

TEXT BOOK:

- Sumitabha Das, Your UNIX - The Ultimate Guide, TMH Publications, 2001.
- M.G. Venkatesh Murthy, Introduction to UNIX & SHELL programming, Pearson Education.
- Sumitabha Das, UNIX Concepts and Applications, TMH Publications, 4th Edition.
- Gaham Glass& K. Ables, UNIX for Programmers and Users, Pearson Education, 3rd Edition.
- B.A. Forouzan & R.F. Giberg, Thomson, UNIX and Shell Programming.
- E. Foster – Johnson & Other, Beginning Shell Scripting, Wiley - India.
- N. B. Venkateswarlu, Advanced UNIX Programming, BS PUBLISHERS.

	Prepared by	**Approved by**
Signature		
Name	**Mr. A.Sudhakar**	**Dr. N. Ravi Shankar**
Designation	**Asst. Professor, CSE Department**	**Professor, H.O.D of CSE.**
Date		

Course Educational Objectives:

- Study the open source application in the field of pedagogy.
- To learn the efficiency of open source software in the orientation of information literacy.
- To know about the usage of model in information literacy orient.

Course Outcomes

- Ability to install and run open-source operating systems.
- Ability to gather information about Free and Open Source Software projects from software releases and from sites on the internet.
- Ability to build and modify one or more Free and Open Source Software packages.
- Ability to use a version control system and to interface with version control systems used by development communities.
- Ability to contribute software to and interact with Free and Open Source Software development projects.

Pre requisite: Knowledge of operating systems

S.N0	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
		UNIT-1			
1	10-08-15	Introduction		1	DM1
2	13-08-15	Operating system services		1	DM1/DM6
3	14-08-15	Architecture of Unix		1	DM1/DM6
4	17-08-15	Features of Unix		1	DM1/ DM6
5	18-08-15	Features of Unix		1	DM1/ DM6
6	20-08-15	Unix Commands		1	DM1/ DM6
7	21-08-15	Tutorial-1		1	DM2
8	22-08-15	PATH,man,echo commands		1	DM1/DM6
9	24-08-15	printf,script,passwd commands		1	DM1/DM6
10	25-08-15	uname,who,date commands		1	DM1/ DM6
11	27-08-15	Example		1	DM1
12	28-08-15	stty,telnet,ftp		1	DM2
13	29-08-15	The File System Hierarchy, The Unix file system		1	DM1

14	31-08-15	Tutorial-2		1	DM2
15	01-09-15	pwd, cd, mkdir		1	DM1/ DM6
16	03-09-15	ls, cp, mv		1	DM1/ DM6
17	04-09-15	Cat		1	
18	07-09-15	more, wc, lp		1	DM1/ DM6
19	08-09-15	od, tar, zip,g zip		1	
20	10-09-15	Chmod		1	DM1/ DM6
21	11-09-15	Unmask		1	DM1
22	14-09-15	Tutorial-3		1	DM2
UNIT 2					
23	15-09-15	The shell as process command		1	DM1/ DM6
24	16-09-15	pattern matching		1	DM1
25	18-09-15	Escaping		1	DM1/ DM6
26	19-09-15	Quoting		1	
27	21-09-15	Redirection, Pipes		1	DM1
28	22-09-15	Tee, Command Substitution		1	
29	23-09-15	vi editor		1	DM1
30	25-09-15	Shell variables, Shell scripts : read,exit		1	DM1
31	26-09-15	Tutorial-4		1	DM2
32	05-10-15	Conditional Statements : if, test, case		1	DM1/ DM6
33	06-10-15	expr ,sleep & wait		1	DM1/ DM6
34	07-10-15	Looping Statements : While and until looping-Examples		1	DM1/ DM6
35	09-10-15	Examples		1	DM1
UNIT 3					
36	12-10-15	**The Process:** Process basics-init, ps		1	DM1
37	13-10-15	Tutorial-5		1	DM2
38	14-10-15	The process creation mechanism, Process attributes		1	DM1
39	16-10-15	signals Running jobs control		1	DM1
40	17-10-15	at ,batch		1	DM1
41	26-10-15	cron and crontab		1	DM1/ DM6

42	27-10-15	**Filters: Simple** Filters-pr		1	DM1
43	28-10-15	cmp, comm, diff		1	DM1/ DM6
44	30-10-15	head, tail, cut, paste		1	DM1
45	31-10-15	Tutorial-6		1	DM2
46	02-11-15	sort, uniq, tr		1	DM1/ DM6
47	03-11-15	**Filters using Regular Expressions:** Sample Database		1	DM1/ DM6
48	04-11-15	grep, egrep		1	DM1/ DM6
49	06-11-15	fgrep, Sed -line addressing		1	DM1/ DM6
50	07-11-15	context addressing, text editing		1	DM1
51	09-11-15	substitution		1	DM1
52	10-11-15	Tutorial-7		1	DM2
		UNIT 4			
53	16-11-15	**Programming with awk:** awk Preliminaries		1	DM1
54	17-11-15	print &printf statements		1	DM1
55	18-11-15	Expressions, Comparisons and logical operators		1	DM1/ DM6
56	20-11-15	Positional Parameters		1	DM1
57	21-11-15	Arrays		1	DM1
58	23-11-15	Arrays		1	DM1
59	24-11-15	Built-in Variables		1	DM1
60	25-11-15	Tutorial-8		1	DM2
61	27-11-15	Decision statements		1	DM1
62	28-11-15	Looping statements		1	DM1/ DM6
63	30-11-15	Looping statements		1	DM1/ DM6
64	01-12-15	Functions		1	DM1
		UNIT 5			
65	04-12-15	Introduction to R-tool		1	DM1/ DM6
66	05-12-15	Tutorial-9		1	DM2
67	07-12-15	Octiva		1	DM1
68	08-12-15	Octiva		1	DM1

69	09-12-15	SCI LAB		1	DM1
70	11-12-15	Introduction to PHP		1	DM1
TOTAL					
Total number of classes required to complete the syllabus				70	
Total number of classes available as per Schedule				70	

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

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

	Prepared by	Approved by
Signature		
Name	**Mr. A.Sudhakar**	**HOD/CSE**
Designation	**Asst.Professor/CSE**	**Professor**

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	Prepared by	Approved by
Signature		
Name	**Mr. A.Sudhakar**	**HOD/CSE**
Designation	**Asst.Professor/CSE**	**Professor**

LESSON PLAN

Course Code & Course Name:
S 243, ENVIRONMENTAL STUDIES **SEM: III, A.Y. 2015-16**
Programme: II B. Tech **Department: CSE-A**

S. No.	Tentative Date	Topics to be covered	Actual Date	Number of Classes	Delivery Method
1	10/08/15	Course Objective, introduction, their applications		1	DM1
		UNIT I			
2	12/08/15	Introduction to syllabus, Def of Environmental studies, Scope & Importance of environmental studies. Need for public awareness.		1	DM1
3	17/08/15	Introduction to natural resources & Classification Forest resources & importance Deforestation, reasons, consequences and sustainable forest management, case studies		1	DM1
4	19/08/15	Water resources, Use and exploitation, reasons for scarcity. Water resource management, water conflicts, Flood, Draughts; Causes, effects & control measures		1	DM1
5	22/08/15	**TUTORIAL 1**		1	DM2
6	24/08/15	Food resources, world food problems, Green revolution. Effects of modern agriculture, food security.		1	DM1
7	26/08/15	Introduction to mineral resources & Categorization, Exploitation, Characteristics of minerals & mining activities, Impacts of mineral extraction on environment& cases		1	DM1
8	29/08/15	Introduction to energy resources. Renewable energy resources. Non renewable energy resources Use of alternative energy resources		1	DM1
9	31/08/15	**TUTORIAL 2**		1	DM2
10	2/09/15	Assignment UNIT I		1	DM4
11	7/09/15	Quiz UNIT I		1	DM3
12	9/09/15	Structure and functions of ecosystem		1	DM1
13	14/09/15	Ecological succession, Food chain, food web and ecological pyramids		1	DM1
14	16/09/15	**TUTORIAL 3**		1	DM2
15	20/09/15	Introduction definition, genetic species and ecosystem diversity, India as a mega biodiversity nation		1	DM1
16	21/09/15	Hotspots of biodiversity, Endangered and endemic species of India		1	DM1

17	23/09/15	Conservation of biodiversity In-situ, ex-situ conservation of biodiversity Values of biodiversity, consumptive use, productive use		1	DM1
18	26/09/15	Revision		1	DM1
19	5/10/15	Environmental pollution Introduction Air pollution		1	DM1
20	7/10/15	Water pollution		1	DM8
21	12/10/15	**TUTORIAL 4**		1	DM2
22	14/10/15	Soil pollution		1	DM1
23	17/10/15	Marine pollution		1	DM8
24	26/10/15	Noise pollution		1	DM1
25	28/10/15	Radioactive Pollution		1	DM8
26	31/10/15	Solid waste management causes effects and control measures of urban and industrial wastes		1	DM8
27	2/11/15	Role of individual in pollution prevention		1	DM3
28	4/11/15	Disaster Management		1	DM1
29	7/11/15	**TUTORIAL 5**		1	DM2
30	9/11/15	From unsustainable to sustainable Development		1	DM1
31	16/11/15	Environment and human health		1	DM2
32	18/11/15	Rain water harvesting and Watershed management, Resettlement and Rehabilitation		1	DM1
33	21/11/15	**TUTORIAL 6**		1	DM2
34	23/11/15	Climate change: Global warming, Acid rains. Ozone layer depletion, Nuclear Accidents and holocaust.		1	DM1
35	25/11/15	Consumerism and Waste products		1	DM1
36	28/11/15	Population growth and variations among nations		1	DM1
37	30/11/15	**TUTORIAL 7**		1	DM2
38	2/12/15	Population explosion, Family welfare programs		1	DM1
39	5/12/15	HIV/Aids and Value Education		1	DM1
40	7/12/15	Role of IT in Environment and Human Health		1	DM1
41	9/12/15	Women and Child Welfare, Human Rights, Air act, Water act & Environmental protection Acts			
		Total Number of classes required to complete the syllabus			

NOTE: DELIVERY METHOD (DM) DM 1 : Lecture interspersed with discussion / BB DM2: Tutorial DM3: Lecture with a quiz DM4: Assignment / Quiz DM5: Demonstration (Laboratory, Field visit) DM6: Group Discussion DM7: Group assignment / Project DM8: Presentation / PPT DM9: Asynchronous Discussion
At the end of course, students attained the CO1,CO2, CO3, etc…….. sample proofs are enclosed in course file.

Signature		
	Name of the Faculty Name of the Course Co-ordinator	HOD
	V. Bhagya Lakshmi Shaheda Niloufer	Dr. A. RAMIREDDY

LESSON PLAN

Course Code & Course Name:
S 243, ENVIRONMENTAL STUDIES **SEM: III, A.Y. 2015-16**
Programme: II B. Tech **Department: CSE-B**

S. No.	Tentative Date	Topics to be covered	Actual Date	Number of Classes	Delivery Method
1	12/08/15	Course Objective, introduction, their applications		1	DM1
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2	13/08/15	Introduction to syllabus, Def of Environmental studies, Scope & Importance of environmental studies. Need for public awareness.		1	DM1
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11	9/09/15	Quiz UNIT I		1	DM3
12	10/09/15	Structure and functions of ecosystem		1	DM1
13	16/09/15	Ecological succession, Food chain, food web and ecological pyramids		1	DM1
14	19/09/15	**TUTORIAL 3**		1	DM2

15	23/09/15	Introduction definition, genetic species and ecosystem diversity, India as a mega biodiversity nation		1	DM1
16	26/09/15	Hotspots of biodiversity, Endangered and endemic species of India Conservation of biodiversity In-situ, ex-situ conservation of biodiversity Values of biodiversity, consumptive use, productive use		1	DM1
17	07/10/15	Environmental pollution Introduction Air pollution		1	DM1
18	08/10/15	Water pollution		1	DM8
19	14/10/15	**TUTORIAL 4**		1	DM2
20	15/10/15	Soil pollution		1	DM1
21	17/10/15	Marine pollution		1	DM8
22	28/10/15	Noise pollution		1	DM1
23	29/10/15	Radioactive Pollution		1	DM8
24	31/10/15	Solid waste management causes effects and control measures of urban and industrial wastes		1	DM8
25	4/11/15	Role of individual in pollution prevention		1	DM1
26	5/11/15	Disaster Management		1	DM1
27	7/11/15	**TUTORIAL 5**		1	DM2
28	12/11/15	From unsustainable to sustainable Development		1	DM1
29	18/11/15	Environment and human health		1	DM1
30	19/11/15	Rain water harvesting and Watershed management, Resettlement and Rehabilitation		1	DM1
31	21/11/15	**TUTORIAL 6**		1	DM2
32	25/11/15	Climate change: Global warming, Acid rains. Ozone layer depletion, Nuclear Accidents and holocaust.		1	DM1
33	26/11/15	Consumerism and Waste products		1	DM1
34	28/11/15	Population growth and variations among nations		1	DM1
35	2/12/15	**TUTORIAL 7**		1	DM2
36	3/12/15	Population explosion, Family welfare programs		1	DM1
37	5/12/15	HIV/Aids and Value Education		1	DM1
38	9/12/15	Role of IT in Environment and Human Health		1	DM1
39	10/12/15	Women and Child Welfare, Human Rights		1	DM1
40	12/12/15	Air act, Water act & Environmental protection Acts		1	DM1
		Total Number of classes available as per academic calender			
		Total Number of classes required to complete the syllabus			

NOTE: DELIVERY METHOD (DM) DM 1 : Lecture interspersed with discussion / BB DM2: Tutorial DM3: Lecture with a quiz DM4: Assignment / Quiz DM5: Demonstration (Laboratory, Field visit) DM6: Group Discussion DM7: Group assignment / Project DM8: Presentation / PPT DM9: Asynchronous Discussion

At the end of course, students attained the CO1,CO2, CO3, etc…….. sample proofs are enclosed in course file.

Signature			
	Name of the Faculty	Name of the Course Co-ordinator	HOD
	Bhagya Lakshmi	Shaheda Niloufer	Dr. A. RAMIREDDY

	LESSON PLAN
	Course Code & Course Name:S134 & Applied MATHEMATICS-III SEM: III Programme: II B. Tech Department: CSE (A)

S. No	Tentative Date	Topics to be covered	Actual Date	Number of classes	Delivery Method
1	10/08/15	Course Objective, introduction, their applications		1	DM1
		UNIT – I			
2	12/08/15	Introduction to solution of algebraic and transcendental equations		1	DM1
3	13/08/15	Method of False Position		1	DM1
4	14/08/15	Method of False Position		1	DM1
5	17/08/15	Newton-Raphson Method		1	DM1
6	19/08/15	Newton Raphson Method		1	DM1
7	20/08/15	Related Problems		1	DM1
8	21/08/15	Numerical Integration		1	DM1
9	22/8/15	Trapezoidal Rule		1	DM1
10	24/08/15	Simpson's 1/3 Rule		1	DM1
11	26/08/15	Simpson's 3/8 Rule		1	DM1
12	27/08/15	**TUTORIAL -1**		1	DM2
13	28/08/15	Related Problems		1	DM1
14	29/08/15	**Assignment in UNIT I**		1	DM4
15	31/08/15	**TUTORIAL -2**		1	DM2
16	02/09/15	**Quiz in UNIT I**		1	DM3
		UNIT – II			
17	03/09/15	Introduction to Interpolation			
18	04/09/15	Finite Differences		1	DM1
19	07/09/15	Forward Differences		1	DM1
20	09/09/15	Backward Differences		1	DM1
21	10/09/15	**TUTORIAL -3**		1	DM2
22	11/09/15	Central differences		1	DM1
23	14/09/15	Symbolic Relations and separation of symbols		1	DM1
24	16/09/15	Differences of a polynomial		1	DM1
25	18/09/15	Newton's formulae for interpolation		1	DM1

26	19/09/15	**TUTORIAL -4**		1	DM2
27	21/09/15	Newton's formulae for interpolation		1	DM1
28	23/09/15	Gauss Interpolation formula		1	DM1
29	25/09/15	Lagrange's interpolation formula		1	DM1
30	26/09/15	**Assignment in UNIT II**		1	DM4
31	05/10/15	**Quiz in UNIT II**		1	DM3
		UNIT – III			
32	07/10/15	Numerical Solution of ODE		1	DM1
33	08/10/15	Solution of ODE by Taylor's series		1	DM1
34	09/10/15	Solution of ODE by Taylor's series		1	DM1
35	12/10/15	Picard's Method of successive Approximation		1	DM1
36	14/10/15	Picard's Method of successive Approximation		1	DM1
37	15/10/15	Euler's and Modified Euler's Method		1	DM1
38	16/10/15	Euler's and Modified Euler's Method		1	DM1
39	17/10/15	**TUTORIAL -5**		1	DM2
40	26/10/15	Runge-Kutta Method		1	DM1
41	28/10/15	Runge-Kutta Method		1	DM1
42	29/10/15	Runge-Kutta Method		1	DM1
43	30/10/15	Revision		1	DM1
44	31/10/15	**Assignment in UNIT III**		1	DM4
45	02/11/15	**Quiz in UNIT III**		1	DM3
		UNIT – IV			
46	04/11/15	Vector Differentiation		1	DM1
47	05/11/15	Gradient		1	DM1
48	06/11/15	Directional Derivatives		1	DM1
49	07/11/15	**TUTORIAL -6**		1	DM2
50	09/11/15	Divergence		1	DM1
51	12/11/15	Curl		1	DM1
52	13/11/15	Laplacian and second order operators		1	DM1
53	16/11/15	Properties		1	DM1
54	18/11/15	**TUTORIAL -7**		1	DM2
55	19/11/15	Vector Identities		1	DM1

56	20/11/15	**Assignment in UNIT IV**		1	DM4
57	21/11/15	**Quiz in UNIT IV**		1	DM3
UNIT – V					
58	23/11/15	Vector Integration		1	DM1
59	25/11/15	Line Integral		1	DM1
60	26/11/15	Work done, Area		1	DM1
61	27/11/15	Surface Integral		1	DM1
62	28/11/15	Volume Integral		1	DM1
63	30/11/15	**TUTORIAL -8**		1	DM2
64	01/12/15	Applications on Gauss divergence Theorem		1	DM1
65	02/12/15	Applications on Gauss divergence Theorem		1	DM1
66	03/12/15	Applications on Green's Theorem		1	DM1
67	04/12/15	**TUTORIAL -9**		1	DM2
68	05/12/15	Applications on Stokes' Theorem		1	DM1
69	07/12/15	Applications on Stokes' Theorem		1	DM1
70	09/12/15	**TUTORIAL -10**		1	DM2
71	10/12/15	**Assignment in UNIT V**		1	DM4
72	11/12/15	**Quiz in UNIT V**		1	DM3
		Total Number of classes available as per academic calendar		72	
		Total Number of classes required to complete the syllabus		70	

Signature		
	Name of the Faculty Name of the Course Co-ordinator	HOD
	M.RAMI REDDY K. JHANSI RANI	Dr. A. RAMIREDDY

	LESSON PLAN
	Course Code & Course Name: **S 134, Applied Mathematics III** **SEM: III, A.Y. 2015-16** **Programme: II B. Tech** **Department: CSE B**

S.No.	Tentative Date	Topics to be covered	Actual Date	Number of Classes	Delivery Method
1	12/08/15	Course Objective, introduction, their applications		1	DM1
UNIT I					
2	13/08/15	Introduction to solution of algebraic and transcendental equations		1	DM1
3	14/08/15	Method of False Position		1	DM1
4	18/08/15	Method of False Position		1	DM1
5	19/08/15	Newton-Raphson Method		1	DM1
6	20/08/15	Newton Raphson Method		1	DM1
7	22/08/15	**TUTORIAL 1**		1	DM2
8	25/08/15	Trapezoidal Rule		1	DM1
9	26/08/15	Simpson's 1/3 Rule		1	DM1
10	27/08/15	Simpson's 3/8 Rule		1	DM1
11	28/08/15	Related Problems		1	DM1
12	29/08/15	**TUTORIAL 2**		1	DM2
UNIT II					
13	01/09/15	Introduction to interpolation		1	DM1
14	02/09/15	Finite Differences		1	DM1
15	03/09/15	Forward Differences		1	DM1
16	04/09/15	Backward Differences		1	DM2
17	08/09/15	Central Differences		1	DM1

18	09/09/15	Central Differences		1	DM1
19	10/09/15	**Assignment UNIT I**		1	DM4
20	11/09/15	**Quiz UNIT I**		1	DM4
21	12/09/15	**TUTORIAL 3**		1	DM2
22	15/09/15	Symbolic Relations and separation of symbols		1	DM1
23	16/09/15	Differences of a polynomial		1	DM1
24	18/09/15	Newton's formulae for interpolation		1	DM1
25	19/09/15	**TUTORIAL 4**		1	DM2
26	22/09/15	Lagrange's interpolation formula		1	DM1
27	23/09/15	Related Problems		1	DM1
28	25/09/15	**Assignment UNIT II**		1	DM4
29	26/09/15	**Quiz UNIT II**		1	DM4
UNIT III					
30	06/10/15	Numerical Solution of ODE		1	DM1
31	07/10/15	Solution of ODE by Taylor's series		1	DM1
32	08/10/15	Solution of ODE by Taylor's series		1	DM1
33	09/10/15	Picard's Method of successive Approximation		1	DM1
34	10/10/15	Picard's Method of successive Approximation		1	DM1
35	13/10/15	Euler's and Modified Euler's Method		1	DM1
36	14/10/15	Euler's and Modified Euler's Method		1	DM1
37	15/10/15	Runge-Kutta Method		1	DM1
38	16/10/15	Runge-Kutta Method		1	DM1
39	17/10/15	**TUTORIAL 5**		1	DM2
UNIT IV					

40	27/10/15	Vector Differentiation		1	DM1
41	28/10/15	Gradient		1	DM1
42	29/10/15	Directional Derivatives		1	DM1
43	30/10/15	Divergence		1	DM1
44	31/10/15	**TUTORIAL 6**		1	DM2
45	03/11/15	**Assignment UNIT III**		1	DM4
46	04/11/15	**Quiz UNIT III**		1	DM4
47	05/11/15	Curl		1	DM1
48	06/11/15	Laplacian and second order operators		1	DM1
49	07/11/15	**TUTORIAL 7**		1	DM2
50	10/11/15	Properties		1	DM1
UNIT V					
51	12/11/15	Vector Integration		1	DM1
52	13/11/15	Line Integral		1	DM1
53	14/11/15	**TUTORIAL 8**		1	DM2
54	17/11/15	Work done, Area		1	DM1
55	18/11/15	Surface Integral		1	DM1
56	19/11/15	Surface Integral		1	DM1
57	20/11/15	Volume Integral		1	DM1
58	21/11/15	**TUTORIAL 9**		1	DM2
59	24/11/15	**Assignment UNIT IV**		1	DM4
60	25/11/15	**Quiz UNIT IV**		1	DM4
61	26/11/15	Applications on Gauss divergence Theorem		1	DM1
62	27/11/15	Applications on Gauss divergence Theorem		1	DM1

63	28/11/15	**TUTORIAL 10**		1	DM2
64	01/12/15	Applications on Green's Theorem		1	DM1
65	02/12/15	Applications on Green's Theorem		1	DM1
66	03/12/15	Applications on Stokes' Theorem		1	DM1
67	04/12/15	Applications on Stokes' Theorem		1	DM1
68	05/12/15	**TUTORIAL 11**		1	DM2
69	08/12/15	**Assignment UNIT V**		1	DM4
70	09/12/15	**Quiz UNIT V**		1	DM4
71	10/12/15	Revision		1	
72	11/12/15	Revision		1	
73	12/12/15	Advanced Topics		1	
		Total Number of classes available as per academic calendar		73	
		Total Number of classes required to complete the syllabus		67	

NOTE: DELIVERY METHODS (DM) DM 1 : Lecture interspersed with discussions / BB DM2: Tutorial DM3: Lecture with a quiz DM4: Assignment DM5: Demonstration (Laboratory, Field visit) DM6: Group Discussion DM7: Group assignment / Project DM8: Presentation / PPT DM9: Asynchronous Discussion.

Sign.		
	Faculty Course Coordinator	HOD
	Dr. K.R.KAVITHA	Dr. A.RAMIREDDY

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
UNIT-I: REGISTER TRANSFER & MICRO-OPERATIONS					
1.	10-08-15	Unit - I Introduction to Digital components		1	DM1
2.	13-08-15	Register Transfer Language, Register Transfer		1	DM1
3.	14-08-15	Bus & memory transfers :using multiplexers		1	DM1
4.	17-08-15	Bus & memory transfers :using three state buffers		1	DM1
5.	18-08-15	**TUTORIAL – 1**		1	DM1
6.	20-08-15	Arithmetic Micro-operations		1	DM1
7.	21-08-15	Arithmetic circuit		1	DM1
8.	22-08-15	Logic Micro-operations		1	DM2
9.	24-08-15	Shift Micro-operations		1	DM1
10.	25-08-15	Arithmetic Logic Shift Unit		1	DM1
11.	27-08-15	**QUIZ / TEST – I**		1	DM2
12.	28-08-15	**Basic Computer Organization and Desisn**: Instruction codes		1	DM1
13.	29-08-15	Computer registers		1	DM1
14.	31-08-15	Computer Instructions		1	DM1
15.	01-09-15	Instruction Cycle		1	DM4
16.	03-09-15	**TUTORIAL – 2**		1	DM1
17.	04-09-15	Register reference instructions		1	DM1
18.	07-09-15 08-09-15	Memory-Reference Instructions		2	DM1/DM2
19.	10-09-15	Input-Output instructions,		1	DM1
20.	11-09-15	Interrupts		1	DM1
21.	14-09-15	**QUIZ / TEST – 2**		1	DM4
UNIT – II MICRO PROGRAMMED CONTROL					
22.	15-09-15	Control Memory		1	DM1
23.	18-09-15	Address Sequencing		1	DM1
24.	19-09-15	Micro-Program example		1	DM1
25.	21-09-15	Design of Control Unit		1	DM1
26.	22-09-15	**TUTORIAL – 3**		1	DM3
27.	25-09-15	Hardwired control , Microprogram control		1	DM1
28.	26-09-15	**CENTRAL PROCESSING UNIT:** Stack organization		1	DM1
29.	05-10-15	Instruction formats		1	DM1
30.	06-10-15	Addressing modes		1	DM1
31.	08-10-15	**QUIZ / TEST – 3**		1	DM4

32.	09-10-15	Data transfer and manipulation instructions		1	DM1
33.	12-10-15	Program control		1	DM1
34.	13-10-15	Reduced Instruction Set Computer		1	DM1
I – MID EXAMINATIONS					
UNIT- III Pipelining And Vector Processing:					
35.	15-10-15	Parallel Processing, Pipelining		1	DM1
36.	16-10-15	Arithmetic Pipeline		1	DM1
37.	17-10-15	Instruction Pipeline		1	DM1
38.	26-10-15	Risc Pipeline, Vector Processing		1	DM1
39.	27-10-15	**TUTORIAL – 4**		1	DM2
40.	29-10-15	**Computer Arithmetic:** Data Representation: Fixed Point Representation		1	DM1
41.	30-10-15	Floating Point Representation		1	
42.	31-10-15	Addition and Subtraction		1	DM1
43.	02-11-15	Multiplication algorithm		1	DM1
44.	03-11-15	**QUIZ / TEST – 4**		1	DM3
45.	05-11-15	Booth's Multiplication algorithm		1	DM1
46.	06-11-15	Division Algorithms		1	DM1
47.	09-11-15 10-11-15	Floating-point Arithmetic operations		2	DM3
48.	13-11-15	Decimal Arithmetic unit		1	DM1
49.	16-11-15	**TUTORIAL – 5**			DM2
50.	17-11-15	Decimal Arithmetic operations		1	DM2
UNIT- IV Memory Organization					
51.	19-11-15	Memory Hierarchy		1	DM2
52.	20-11-15 21-11-15	Main Memory		2	DM1
53.	23-11-15	Auxiliary memory		1	DM1
54.	24-11-15	Associative memory		2	DM1
55.	26-11-15 27-11-15	Cache Memory		2	DM1
56.	28-11-15	**QUIZ / TEST – 5**		1	DM3
57.	30-11-15 01-12-15	Virtual memory		2	DM1
UNIT- IV INPUT-OUTPUT ORGANIZATION					
58.	02-12-15	Peripheral Devices		1	DM1
59.	04-12-15	Input-Output Interface,		1	DM1
60.	05-12-15	Asynchronous Data Transfer		1	DM1
61.	07-12-15	Priority Interrupt		1	DM1
62.	08-12-15	Daisy chain interrupt		1	DM2
63.	09-12-15	Direct Memory Access		1	DM1

NOTE:

DELIVERY METHODS : **DM1**: Lecture interspersed with discussions/BB, **DM2:** Tutorial,

64.	11-12-15	Input-Output Processor,		1	DM2
65.	12-12-15	Serial Communication		1	DM4
II – MID Examinations					
Total Classes			72		
Total number of classes required to complete the syllabus			70		
Total number of classes available as per Schedule			72		

DM3: Lecture with a quiz, **DM4**: Assignment/Test, **DM5**: Demonstration (laboratory, field visit), **DM6:** Presentations/PPT

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

Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**
	V.SIVA KRISHNA		

S No.	Tentative Date	Topics to be covered	Actual Date	Num. of classes	Content Delivery Methods
UNIT-I: REGISTER TRANSFER & MICRO-OPERATIONS					
66.	10-08-15	Unit - I Introduction to Digital components		1	DM1
67.	12-08-15	Register Transfer Language, Register Transfer		1	DM1
68.	13-08-15	Bus & memory transfers :using multiplexers		1	DM1
69.	17-08-15	Bus & memory transfers :using three state buffers		1	DM1
70.	18-08-15	**TUTORIAL – 1**		1	DM1
71.	19-08-15	Arithmetic Micro-operations		1	DM1
72.	20-08-15	Arithmetic circuit		1	DM1
73.	22-08-15	Logic Micro-operations		1	DM2
74.	24-08-15	Shift Micro-operations		1	DM1
75.	25-08-15	Arithmetic Logic Shift Unit		1	DM1
76.	26-08-15	**Basic Computer Organization and Desisn**: Instruction codes		1	DM2
77.	27-08-15	Computer registers		1	DM1
78.	29-08-15	Computer Instructions		1	DM1
79.	31-08-15	Instruction Cycle , Register reference instructions		1	DM1
80.	01-09-15	Memory-Reference Instructions		1	DM4
81.	02-09-15	Input-Output instructions, Interrupts		1	DM1
UNIT – II MICRO PROGRAMMED CONTROL					
82.	03-09-15	Control Unit		1	DM1
83.	07-09-15	Address Sequencing		1	DM1
84.	08-09-15	Micro-Program example		1	DM1
85.	09-09-15	Design of Control Unit		1	DM1
86.	10-09-15	Hardwired control , Microprogram control		1	DM1
87.	14-09-15	**TUTORIAL – 2**		1	DM1
88.	15-09-15	**CENTRAL PROCESSING UNIT:** Stack organization		1	DM1
89.	16-09-15	Instruction formats		1	DM1
90.	19-09-15	Instruction formats		1	DM1
91.	21-09-15	Addressing modes		1	DM3
92.	22-09-15	Data transfer and manipulation instructions		1	DM1
93.	23-09-15	Program control, Reduced Instruction Set Computer		1	DM1
94.	26-09-15	**QUIZ / TEST – 1**		1	DM4
I – MID EXAMINATIONS					

UNIT- III Pipelining And Vector Processing:					
95.	05-10-15	Parallel Processing, Pipelining		1	DM1
96.	06-10-15	Arithmetic Pipeline		1	DM1
97.	07-10-15	Instruction Pipeline		1	DM1
98.	08-10-15	Risc Pipeline, Vector Processing		1	DM1
99.	12-10-15	**TUTORIAL – 3**		1	DM1
100	13-10-15	**Computer Arithmetic:** Data Representation: Fixed Point Representation		1	DM1
101	14-10-15	Floating Point Representation		1	DM1
102	17-10-15	Addition and Subtraction		1	DM1
103	26-10-15	Multiplication algorithm		1	DM1
104	27-10-15	Booth's Multiplication algorithm		1	DM2
105	28-10-15 29-10-15	Division Algorithms		2	DM1
106	31-10-15	**TUTORIAL – 4**		1	
107	02-11-15 03-11-15	Floating-point Arithmetic operations		2	DM1
108	04-11-15 05-11-15	Decimal Arithmetic unit		2	DM1
109	09-11-15	Decimal Arithmetic operations		1	DM3
110	10-11-15	EXAMPLE PROBLEMS		2	DM1
111	13-11-15	**QUIZ / TEST – 2**		1	DM1
UNIT- IV Memory Organization					
112	16-11-15	Memory Hierarchy		1	DM2
113	19-11-15 20-11-15	Main Memory		2	DM1
114	21-11-15	Auxiliary memory		1	DM1
115	23-11-15 24-11-15	Associative memory		2	DM1
116	26-11-15 27-11-15	Cache Memory		2	DM1
117	28-11-15	**QUIZ / TEST – 5**		1	DM3
118	30-11-15 01-12-15	Virtual memory		2	DM1
UNIT- IV INPUT-OUTPUT ORGANIZATION					
119	02-12-15	Peripheral Devices		1	DM1
120	04-12-15	Input-Output Interface,		1	DM1
121	05-12-15	Asynchronous Data Transfer		1	DM1
122	07-12-15	Priority Interrupt		1	DM1
123	08-12-15	Daisy chain interrupt		1	DM2
124	09-12-15	Direct Memory Access		1	DM1
125	11-12-15	Input-Output Processor,		1	DM2
126	12-12-15	Serial Communication		1	DM4

II – MID Examinations	
Total Classes	72
Total number of classes required to complete the syllabus	70
Total number of classes available as per Schedule	72

NOTE:

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

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

Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**
	V.SIVA KRISHNA		

	Sub Name : DISCRETE MATHEMATICAL STRUCTURES **Faculty Name: M.Naveen** **Branch: CSE** **Class: II B.Tech** **Semester: I**	**Date:** **To** **Page**

Course Description:

The Discrete Mathematical Structures subject gives the ability to solve the large logical problems which applicable in research area. In this subject each unit gives different types of problems which applied in different areas. This subject covers mathematical logic for statement calculus and predicate calculus, normal forms, predicate logic, inference theory for statement calculus and predicate calculus, set theory on relations and function, algebraic structures, permutations, combinations, binomial, multinomial theorems, directed & undirected graphs, trees, spanning trees, its algorithms, minimum spanning trees, its algorithms, and solving recurrence relations with different procedures.

Course Key Points:

- First unit covers Mathematical logic for Statement calculus and Predicate calculus, inference theory for Statement calculus and Predicate calculus, Normal forms equivalences and logical implications.
- Second unit deals about set theory in all relations and functions.
- Third unit covers the graph theory about its types, properties, algorithms, and coloring.
- Fourth unit covers algebraic structures and Combinatorics.
- Fifth unit deals with recurrence relations using generating functions and characteristic roots.

Outcomes:

All undergraduates will have

- ✓ An ability to apply knowledge of mathematical logic for computer science and engineering.
- ✓ An ability to identify, formulates, and solves engineering problems.

- ✓ By using the graph theory the person can easily understands the network topologies in real time applications.
- ✓ By using this subject the person get knowledge about the applications of discrete structures and computing, combinatorics, and graph theory.

	SYLLABUS	Date:
	Sub Name : DISCRETE MATHEMATICAL STRUCTURES **Faculty Name: M.Naveen** **Branch: CSE** **Class: II B.Tech** **Semester: I**	**To** **Page**

UNIT I:

Mathematical Logic: Propositional Calculus: Statements and Notations, Connectives, Truth Tables, Tautologies, Equivalence of Formulas, Duality law, Tautological Implications, Normal Forms, Theory of Inference for Statement Calculus, **Consistency of Premises, Indirect Method of Proof. Predicate calculus:** Predicative Logic, Statement Functions, Variables and Quantifiers, Free & Bound Variables, Inference theory for predicate calculus.

UNIT II:

Set Theory: Introduction, Operations on Binary Sets, Principle of Inclusion and Exclusion

Relations: Properties of Binary Relations, Relation Matrix and Digraph, Operations on Relations, Partition and Covering, Transitive Closure, Equivalence, Compatibility and Partial Ordering Relations, Hasse Diagrams. **Functions**: Bijective Functions, Composition of Functions, Inverse Functions, Permutation Functions, Recursive Functions

UNIT III:

Graph Theory: Basic Concepts of Graphs, Sub graphs, Matrix Representation of Graphs: Adjacency Matrices, Incidence Matrices, Isomorphic Graphs, Paths and Circuits, Eulerian and Hamiltonian Graphs, Multigraphs, (Problems and Theorems without proofs), Graph Theory II: Planar Graphs, Euler's Formula, Graph Colouring and Covering, Chromatic Number,(Problems and Theorems without proofs), Trees, Directed trees, Binary Trees, Decision Trees, Spanning Trees: Properties, Algorithms for Spanning trees and Minimum Spanning Tree.

UNIT IV:

Algebraic Structures: Algebraic Systems with one Binary Operation, Properties of Binary operations, Semi groups and Monoids: Homomorphism of Semi groups and Monoids, Groups: Abelian Group, Cosets, Subgroups (Definitions and Examples of all Structures), **Lattice:** Properties. Algebraic Systems with two Binary Operations: Rings. **Combinatorics:** Basic of Counting, Permutations, Derangements, Permutations with Repetition of Objects, Circular Permutations, Restricted Permutations, Combinations, Restricted Combinations, Pigeonhole Principle and its Application, Binomial Theorem**,** Binomial and Multinomial Coefficients.

UNIT V: Recurrence Relation: Generating Function of Sequences, Partial Fractions, Calculating Coefficient of Generating Functions, Recurrence Relations, Formulation as Recurrence Relations, Solving linear homogeneous recurrence Relations by substitution, generating functions and The Method of Characteristic Roots. Solving Inhomogeneous Recurrence Relations

TEXT BOOKS:

1. Discrete Mathematical Structures with Applications to Computer Science, Tremblay, Manohar, TMH

2. Discrete Mathematics for Computer Scientists & Mathematicians, 2/e, Mott, Kandel, Baker, PHI

	LESSON PLAN	Date:
	Sub Name : DISCRETE MATHEMATICAL STRUCTURES **Faculty Name: M.Naveen** **Branch: CSE-A** **Class: II B.Tech** **Semester: I**	**To** **Page**

REFERENCE BOOKS:

1. Discrete Mathematics, S.Santha, Cengage
2. Discrete Mathematics with Applications, Thomas Koshy, Elsevier
3. Discrete Mathematics,2/e, JK Sharma ,Macmillan
4. Discrete Mathematics,Chandrasekaran,Umaparvathi,2010,PHI
5. Discrete and Combinational Mathematics, 5/e ,Ralph. P.Grimaldi, Ramana, Pearson
6. Elements of Discrete Mathematics, CL Liu,Mahapat

No. of Periods	Date	Unit	Topic to be Covered	Teaching Aid
1.	10-08-15	**UNIT-I**	Introduction	
2.	12-08-15		Mathematical logic: Propositional Calculus, Statements and Notations	**Black Board**
3.	14-08-15		Connectives, Truth Tables	**Black Board**
4.	17-08-15		Tautologies, Equivalence of Formulas Duality law	**Black Board**
5.	18-08-15		Tautological Implications	**Black Board**
6.	19-08-15		Normal Forms	**Black Board**
7.	21-08-15		Normal Forms	**Black Board**
8.	22-08-15		**Tutorial-I**	
9.	24-08-15		Theory of Inference for Statement Calculus	**Black Board**
10.	25-08-15		Theory of Inference for Statement Calculus	**Black Board**
11.	26-08-15		Theory of Inference for Statement Calculus	**Black Board**
12.	28-08-15		Consistency of Premises Indirect Method of Proof	**Black Board**
13.	29-08-15		Predicate calculus: Predicative Logic	**Black Board**

14.	31-08-15		Statement Functions, Variables and Quantifiers Free & Bound Variables	**Black Board**
15.	01-09-15		Inference theory for predicate calculus	**Black Board**
16.	02-09-15		**Tutorial-II**	
17.	04-09-15	**UNIT-II**	Set Theory: Introduction, Operations on Binary Sets	**Black Board**
18.	07-09-15		Principle of Inclusion and Exclusion	**Black Board**
19.	08-09-15		Relations: Properties of Binary Relations	**Black Board**
20.	09-09-15		Relation Matrix and Digraph Operations on Relations	**Black Board**
21.	11-09-15		Relation Matrix and Digraph Operations on Relations	**Black Board**
22.	14-09-15		Partition and Covering, Transitive Closure	**Black Board**
23.	15-09-15		**Tutorial-III**	
24.	16-09-15		Equivalence Relation	**Black Board**
25.	18-09-15		Compatibility Relation	**Black Board**
26.	19-09-15		Partial Ordering Relation & Hasse Diagrams	**Black Board**
27.	21-09-15		Partial Ordering Relation & Hasse Diagrams	**Black Board**
28.	22-09-15		Functions: Bijective Functions	**Black Board**
29.	23-09-15		Composition of Functions, Inverse Functions	**Black Board**
30.	25-09-15		Permutation Functions, Recursive Functions	**Black Board**
31.	26-09-15		**Tutorial-IV**	
32.	05-10-15	**UNIT-III**	Basic Concepts of Graphs, Sub graphs	**Black Board**
33.	06-10-15		Matrix Representation of Graphs	**Black Board**
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45.	30-10-15		Properties of Binary operations, Semi groups and Monoids	**Black Board**
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48.	03-11-15		Lattice: Properties, Algebraic Systems with two Binary Operations: Rings	**Black Board**
49.	04-11-15		Basic of Counting, Permutations, Derangements	**Black Board**
50.	06-11-15		Permutations with Repetition of Objects	**Black Board**
51.	07-11-15		Circular Permutations, Restricted Permutations	**Black Board**
52.	09-11-15		Combinations, Restricted Combinations	**Black Board**
53.	10-11-15		Pigeonhole Principle and its Application	**Black Board**
54.	13-11-15	**UNIT-V**	Binomial Theorem**,** Binomial and Multinomial Coefficients	**Black Board**
55.	16-11-15		Generating Functions of Permutations and Combinations	**Black Board**
56.	17-11-15		The Principles of Inclusion – Exclusion	**Black Board**
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59.	21-11-15		Calculating Coefficient of Generating Functions	**Black Board**
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61.	24-11-15		Recurrence Relations, Formulation as Recurrence Relations	**Black Board**
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64.	28-11-15		Solving Inhomogeneous Recurrence Relations	**Black Board**
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66.	01-12-15	Content Beyond syllabus	Rules of Inference and Automatic Theorem Proving for Statement calculus	**Black Board**
67.	02-12-15	Content Beyond syllabus	DFS, BFS algorithms	**Black Board**
68.	04-12-15	Content Beyond syllabus	Polish theorem	**Black Board**
69.	05-12-15	Content Beyond syllabus	Content Beyond syllabus	**Black Board**
70.	07-12-15	Revision	UNIT-I	**Black Board**
71.	08-12-15	Revision	UNIT-II	**Black Board**
72.	09-12-15	Revision	UNIT-III	**Black Board**
73.	11-12-15	Revision	UNIT-IV	**Black Board**
74.		Revision	UNIT-V	**Black Board**

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	Prepared by	**Approved by**
Signature		
Name	**Mr. M.Naveen**	**HOD/CSE**
Designation	**Asst.Professor/CSE**	**Professor**
Date		

LESSON PLAN

Sub Name : DISCRETE MATHEMATICAL STRUCTURES

Faculty Name: M.Naveen **Branch: CSE-B**

Class: II B.Tech **Semester: I**

Date:

To

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67.	05-12-15	Revision	UNIT-I & II	**Black Board**
68.	07-12-15	Revision	UNIT-III	**Black Board**
69.	08-12-15	Revision	UNIT-IV	**Black Board**
70.	10-12-15	Revision	UNIT-V	**Black Board**
71.	11-12-15			

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	Prepared by	Approved by
Signature		
Name	**Mr. M.Naveen**	**HOD/CSE**
Designation	**Asst.Professor/CSE**	**Professor**
Date		

Unit wise Questions

UNIT-I

1. Explain the following connectives with examples

   a) Λ (and) b) V (or) c) ~, ¬ (Negation)

   d) → (Implication or conditional) e) ↔ (Bi-Conditional)

2. Explain Duality law?

3. When we say that the two statements formulas are equivalent to each other. Explain it clearly?

4. Obtain the PDNF and PCNF for the following formulas:

   i) (¬PV¬Q)→(P↔¬Q)

   ii) QΛ(PΛ¬Q)

5. Show the following equivalences. $(P \rightarrow Q) \wedge (R \rightarrow Q) \Leftrightarrow (PVR) \rightarrow Q$.

6. Explain the terms of equivalence.

7. Show that RVS follows logically from premises.

   C∨D, (C∨D)→┐H, ┐H→(A∧┐B) and (A∧┐B)→R∨S.

8. Show that R →S can be derived from the premises P→(Q→S), ┐R∨P and Q.

9. Show that R∧(PVQ) is a valid conclusion from the premises PVQ, Q→ R, P→M and ┐M.

10. With reference to automatic theorem proving, show that SVR is tautologically implied

by $(P \vee Q) \wedge (P \rightarrow R) \wedge (Q \rightarrow S)$.

11. Explain all methods in Theory of Inference for Statement calculus with examples?

UNIT-II

1. List all the permutations on A = {a,b,c}.

2. Let X= {1,2,3, …….. ,25} and R= { (x,y) / x-y is divisible by 5 } be a relation on X. Show that R is an equivalence relation.

3. Prove that if the function $f : A \rightarrow B$ has an inverse if and only if b is bijective.

4. Show that the set of positive N is a lattice with respect to the operations $a \vee b$ = lcm(a,b) and $a \wedge b$ = gcd(a, b), lcm(least common multiple) and gcd(greatest common divisor)

5. Show that the relation of congruence modulo m has m distinct equivalence classes.

6. Let C be a collection of sets which are closed under intersection and union. Verify whether$(C, \cap, \cup)$ is a lattice.

7. Let S = {1,2,3,4,5} and let A = S x S. Define the following relation R on A such that (a, b) R (a', b') if and only if a b' = a'b.

8. Define the relation $\subset$ on $Z \times Z$ by (a, b) $\subset$ (c, d) if and only if $a \leq c$ and $b \leq d$. Then

   i) Prove that $\subset$ is a partial ordering but not a total ordering.

   ii) Prove that $\subset$ is a lattice ordering on $Z \times Z$.

9. Let a, b, c be integers where $a \neq 0$. Suppose a divides b and a divides c, then prove that a divides bx + cy, where x and y are any integers.

10. How many relations are there in set theory and explain about partial ordering relation and Compatibility relation?

11. Explain briefly

   i) Composition of functions

   ii) Inverse Functions

   iii) Recursive function

UNIT-III

1. Using Warshall's algorithm, compute the adjacency matrix of the transitive closure of the digraph
   G = ({ a,b,c,d,e}, { (a,b), (b,c),(c,d),(d,e),(e,d) }

2. What is coloring problem and hence define proper coloring?

3. Prove that the vertices of every graph can be properly colored with 5-colors.

4. Implement a graph so that the lists of header nodes and arc nodes are circular.

5. Describe the applications and efficiency level s of depth-first traversal.

6. Describe Prim's algorithm for finding shortest paths in minimum spanning tree.

7. Define a chromatic number of a graph and prove that every tree with two or more vertices is 2-chromatic.

8. Define covering prove that covering of graph is minimal if graph contains no path of length 3 or more.

9. Let G be a complete directed graph. A non empty subset of the vertices of G is said to be an 'out classed group' if any edge joining a vertex in the subset and a vertex not in the subset is always directed from the latter to the former. Show that G has a directed circuit containing all the vertices, if there is no outclassed group of vertices

10. What is a minimum spanning tree? What are the different ways of creating minimum spanning trees.

11. Describe the applications and efficiency levels of breadth-first traversal.

12. Prove that the Kuratowskis second graph consisting of 6 vertices and 9 edges is non-planar.

13. State criteria to detect the planarity of a connected graph and give an example also.

14. Find the rank and nullity of the complete graph K_n

15. Prove that a connected graph G remains connected after removing an edge e from G if and only if e belongs to some circuit in G.

16. Describe Kruskal's algorithm to create minimum spanning tree.

17. Prove that if a connected graph has edge weights that are all distinct (in other words, no two edges have the same weight), there is only one minimum spanning tree.

18. Prove that Petersen graph is neither Eulerian nor semi Eulerian.

19. Prove that connected graph is semi-Eulerian if and only if it has actually zero or two vertices of odd degree.

20. Define 1– and 2- isomorphism with one example each.

21. If G_1 and G_2 are two 1-isomorphic graphs then the rank of G_1 is equal to the rank of G_2 and the nullity of G_1 is equal to the nullity of G_2 .

UNIT-IV

1. How many ways can 20 similar books be placed on 5 different shelves?

2. Enumerate the number of ways of placing 20 indistinguishable balls into 5 boxes where each box is nonempty.

3. Find a recurrence relation for the number of ways to arrange flags on flag pole n feet tall using 4 types of flags. Red flags 2 feet high, (or) White, blue and yellow flags each 1 foot high.

4. Find a recurrence relation for the number of ways to make a pile of n chips using garnet, gold, red, white and blue chips such that no two gold chips are together.

5. Compute the number of 10-digit numbers which contain only the digits 1,2 and 3

with the digit 2 appearing in each number exactly twice.

6. Describe Fibonacci relation with suitable examples.

7. Explain the methods of solving recurrence relations with suitable examples.

8. In how many ways can we distribute 10 red balls, 10 white balls, and 10 blue balls into 6 different boxes (any box may be left empty)?

9. How many bridge deals are there in which North and South get all the spades?

10. What is a group and sub group, and explain about its properties?

11. Explain the groups Isomorphism and homomorphism?

UNIT-V

1. Solve the recurrence relation

$S(k) - 0.25\,S(k-1) = 0,\ S(o) = 6.$

2. Solve the recurrence relation $\mathbf{a_n - 9a_{n-1} + 26a_{n-2} - 24a_{n-3} = 0}$ **for** $\mathbf{n \geq 3}$.

3. Solve the Recurrence Relation $\mathbf{a_n - 7a_{n-1} + 10a_{n-2} = 0}$ for $\mathbf{n >= 2\ a_0 = 10, a_1 = 41}$

4. Solve the Recurrence Relation $\mathbf{a_{n+2} + 4a_{n+1} - 5a_n = n^2 + n + 1}$ for $\mathbf{n >= 2\ a_0 = 10, a_1 = 41.}$

Lakireddy Balireddy College of Engineering College

L.B.Reddy Nagar, Mylavaram , Krishna District, A.P

LESSON PLAN

Subject :	**Managerial Economics & Financial Analysis**			
Academic Year :	**2016-17**	Semester :	**III**	**Date: 20.06.2016**
Year :	**II**	Section :	**CSE-A**	**To 05.11.2016**

S295 – MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

Lecture: 5 Periods/week **Internal Marks : 25**

Tutorial : 1 **External Marks : 75**

Credits: 3 **External Examination : 3 Hrs**

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
UNIT –I:						
1	Introduction to Subject	20-06-2016		2	1	1,3,5
2	**Unit 1**:Introduction to managerial economics	21-06-2016		2	1	
3	Introduction to economics	22-06-2015		2	1	
4	Definitions of economics	23-06-2016		2	1	
5	**Kinds of economics: micro and macro economics**	25-06-2016		2	1	
6	Welfare economics	27-06-2016		2	1	
7	Definitions of managerial economics	28-06-2016		2	1	
8	Nature of managerial economics	29-06-2016		2	1	
9	Scope of managerial economics	30-06-2016		2	1	

10	Tutorial	02-07-2016		2	1,3	
11	Limitations of managerial economics	04-07-2016		2	1	
12	Demand analysis and demand determinants	05-07-2016		2	1	
13	Law demand and exceptions	06-07-2016		2	1	
14	Types of demand, Elasticity of demand and types : Price elasticity of demand	11-07-2016		2	1	
15	Income elasticity of demand	12-07-2016		2	1	
16	Cross elasticity of demand	13-07-2016		2	1	
17	Measurement of elasticity of demand	14-07-2016		2	1	
18	Significance of elasticity of demand	16-07-2016		2	1	
19	Tutorial	18-07-2016		2	1	
20	Demand forecasting and explain it's factors	19-07-2016		2	1	
21	Methods of demand forecasting (survey ,statistical ,expert opinion method, test marketing, judgment approach)	20-07-2016		2	1	
UNIT –II:						
22	**UNIT – II** **Theory of Production and Cost Analysis**	21-02-2016		2	1	
23	MRTS,	23-07-2016		2	1	1,3, 5,7
24	Least Cost Combination of Inputs	25-07-2016		2	1	

25	Laws of Returns,	26-07-2016		2	1	
26	Internal and External Economies of Scale.	28-07-2016		2	1	
27	Tutorial	30-07-2016		2	1,3	
28	**Cost Analysis:** Cost concepts	01-08-2016		2	1	
29	Cost & output relationship in short run & long run,	02-08-2016		2	1	
30	Break-even Analysis (BEA)- Determination of Break-Even Point	03-08-2016		2	1	
31	Managerial Significance and limitations of BEA.	4-08-2016		2	1	
32	Simple problems	06-08-2016		2	1	
35	I MID EXAM	08-08-2016			5	
36	I MID EXAM	09-08-2016			5	
37	I MID EXAM	10-08-2016			5	
38	I MID EXAM	11-08-2016			5	
UNIT –III:						
39	**UNIT - III** **Introduction to Markets & Pricing Policies:**	16-08-2016		2	1	1,3, 5,7
40	**Market structures:** Types of competition	17-08-2016		2	1	
41	Features of Perfect competition	18-08-2016		2	1	
42	Features of Monopoly	20-08-2016		2	1	

43	and Monopolistic Competition	22-08-2016		2	1	
44	TUTORIAL	23-08-2016				
45	Price-Output Determination in case of Perfect Competition	24-08-2016		2	1	
46	Price-Output Determination in case of Perfect Competition	25-08-2016				
47	Price-Output Determination in case of and Monopoly	27-08-2016		2	1	
48	Price-Output Determination in case of and Monopoly	29-08-2016				
49	Objectives and Policies of Pricing-Methods of Pricing	30-08-2016		2	1	
50	Method s pricing (cost plus pricing, marginal cost pricing Sealed bid pricing, going rate pricing, limit pricing,	31-08-2016		2	1	
51	Method s pricing (cost plus pricing, marginal cost pricing Sealed bid pricing, going rate pricing, limit pricing,	01-09-2016				
52	Market skimming pricing, penetration pricing two part pricing, block pricing	03-09-2016		2	1	
53	Tutorial	05-09-2016		2	1	
UNIT –IV:						
54	**Capital and Capital Budgeting**: Capital and its significance,	07-09-2016		2	1	
55	Types of Capital,	08-09-2016		2	1	
56	Estimation of Fixed and Working capital requirements,	10-09-2016		2	1	
57	Components of working capital &	12-09-2016		2	1	
58	Factors determining the need of working capital.	13-09-2016		2	1	

59	Methods and sources of raising finance.	14-09-2016		2	1	
60	Nature and scope of capital budgeting,	15-09-2016		2	1	
61	features of capital budgeting proposals,	17-09-2016		2	1	
62	Methods of Capital Budgeting: Payback Method,	13-09-2016		2	1	1,3,5,7
63	Accounting Rate of Return (ARR)	14-09-2016		2	1	
64	and Net Present Value Method	15-09-2016		2	1	
65	Profitability index	22-09-2016		2	1	
66	Internal rate of return	24-09-2016		2	1	
67	Problems payback period	26-09-2016		2	1	
68	Problems of ARR ,Problems of NPV	27-09-2016		2	1	1,3,5,7
69	Problems of ARR ,Problems of NPV	28-09-2016		2	1	
70	Problems of ARR ,Problems of NPV	29-09-2016		2	1	
71	Problem Profitability index, Problems of IRR	01-10-2016		2	1	
72	Tutorial	03-10-2016		2	1	

73	**UNIT – V** **Introduction to Financial Accounting:**	04-10-2016		2	1	
74	Double entry system	05-10-2016		2	1	
75	Book keeping	06-10-2016		2	1	
76	Journal, Ledger, Problems	07-10-2016		2	1	
77	Journal, Ledger, Problems	17-10-2016				
78	Trial Balance- Final Accounts with simple adjustments.	18-10-2016		2	1	
79	Problems	19-10-2016		2	1	1,3, 5,7
80	Problems	20-10-2016		2	1	
81	Problems	22-10-2016				
82	Problems	24-10-2016				
83	TUTORAIL	25-10-2016		2	1	
84	**Financial Analysis through ratios:** Importance, types	26-10-2016		2	1	
85	**Financial Analysis through ratios:** Importance, types	27-10-2016				
86	Liquidity Ratios, Activity Ratios, Capital structure Ratios and Profitability ratios	29-10-2016		2	1	
88	Problems for liquidity ratios	30-10-2016		2	1	
89	**Financial Analysis through ratios:** Importance, types	31-10-2016		2	1	
90	Problems for activity ratios	01-11-2016		2	1	

91	Problems for capital structure ratios, Problems for profitability ratios	02-11-2016		2	1	
92	**II-MID EXAMS**	03-11-2016			5	
93	**II-MID EXAMS**	04-11-2016			5	
94	**II-MID EXAMS**	05-11-2016			5	

Signature of the faculty

D Kalyani

Head of the Department

Dr.A.ADISESHA REDDY

	Lakireddy Balireddy College of Engineering College L.B.Reddy Nagar, Mylavaram , Krishna District, A.P				
	LESSON PLAN				
	Subject :	**Managerial Economics & Financial Analysis**			
	Academic Year :	**2016-17**	Semester :	**III**	**Date: 20.06.2016**
	Year :	**II**	Section :	**CSE-B**	**To 05.11.2016**

S295 – MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

Lecture: 5 Periods/week **Internal Marks : 25**

Tutorial : 1 **External Marks : 75**

Credits: 3 **External Examination : 3 Hrs**

S.NO	TOPIC TO BE COVERED	Date		TLP	DM	AM
		Tentative	Actual			
	UNIT –I:					
1	Introduction to Subject	20-06-2016		2	1	1,3,5
2	**Unit 1**:Introduction to managerial economics	21-06-2016		2	1	
3	Introduction to economics	22-06-2015		2	1	
4	Definitions of economics	24-06-2016		2	1	
5	**Kinds of economics: micro and macro economics**	25-06-2016		2	1	
6	Welfare economics	27-06-2016		2	1	
7	Definitions of managerial economics	28-06-2016		2	1	
8	Nature of managerial economics	29-06-2016		2	1	
9	Scope of managerial economics	30-06-2016		2	1	

10	Tutorial	02-07-2016		2	1,3	
11	Limitations of managerial economics	04-07-2016		2	1	
12	Demand analysis and demand determinants	05-07-2016		2	1	
13	Law demand and exceptions	06-07-2016		2	1	
14	Types of demand, Elasticity of demand and types : Price elasticity of demand	08-07-2016		2	1	
15	Income elasticity of demand	11-07-2016		2	1	
16	Cross elasticity of demand	12-07-2016		2	1	
17	Measurement of elasticity of demand	13-07-2016		2	1	
18	Significance of elasticity of demand	15-07-2016		2	1	
19	Tutorial	16-07-2016		2	1	
20	Demand forecasting and explain it's factors	18-07-2016		2	1	
21	Methods of demand forecasting (survey ,statistical ,expert opinion method, test marketing, judgment approach)	19-07-2016		2	1	
UNIT –II:						
22	**UNIT – II** **Theory of Production and Cost Analysis**	20-02-2016		2	1	
23	MRTS,	22-07-2016		2	1	1,3, 5,7
24	Least Cost Combination of Inputs	23-07-2016		2	1	

25	Laws of Returns,	25-07-2016		2	1	
26	Internal and External Economies of Scale.	26-07-2016		2	1	
27	Tutorial	27-07-2016		2	1,3	
28	**Cost Analysis:** Cost concepts	29-08-2016		2	1	
29	Cost & output relationship in short run & long run,	30-08-2016		2	1	
30	Break-even Analysis (BEA)- Determination of Break-Even Point	01-08-2016		2	1	
31	Managerial Significance and limitations of BEA.	02-08-2016		2	1	
32	Simple problems	03-08-2016		2	1	
33	Managerial Significance and limitations of BEA.	05-08-2016				
34	Simple problems	06-08-2016				
35	I MID EXAM	08-08-2016			5	
36	I MID EXAM	09-08-2016			5	
37	I MID EXAM	10-08-2016			5	
38	I MID EXAM	11-08-2016			5	
UNIT –III:						
39	**UNIT - III** **Introduction to Markets & Pricing Policies:**	12-08-2016		2	1	1,3, 5,7
40	**Market structures:** Types of competition	15-08-2016		2	1	

41	Features of Perfect competition	17-08-2016		2	1	
42	Features of Monopoly	19-08-2016		2	1	
43	and Monopolistic Competition	20-08-2016		2	1	
44	TUTORIAL	22-08-2016				
45	Price-Output Determination in case of Perfect Competition	23-08-2016		2	1	
46	Price-Output Determination in case of Perfect Competition	24-08-2016				
47	Price-Output Determination in case of and Monopoly	26-08-2016		2	1	
48	Price-Output Determination in case of and Monopoly	27-08-2016				
49	Objectives and Policies of Pricing-Methods of Pricing	29-08-2016		2	1	
50	Method s pricing (cost plus pricing, marginal cost pricing Sealed bid pricing, going rate pricing, limit pricing,	30-08-2016		2	1	
51	Method s pricing (cost plus pricing, marginal cost pricing Sealed bid pricing, going rate pricing, limit pricing,	31-08-2016				
52	Market skimming pricing, penetration pricing two part pricing, block pricing	02-09-2016		2	1	
53	Tutorial	03-09-2016		2	1	
UNIT –IV:						
54	**Capital and Capital Budgeting**: Capital and its significance,	05-09-2016		2	1	
55	Types of Capital,	06-09-2016		2	1	
56	Estimation of Fixed and Working capital requirements,	07-09-2016		2	1	

57	Components of working capital &	09-09-2016		2	1	
58	Factors determining the need of working capital.	10-09-2016		2	1	
59	Methods and sources of raising finance.	12-09-2016		2	1	
60	Nature and scope of capital budgeting,	15-09-2016		2	1	
61	features of capital budgeting proposals,	13-09-2016		2	1	
62	Methods of Capital Budgeting: Payback Method,	14-09-2016		2	1	1,3,5,7
63	Accounting Rate of Return (ARR)	16-09-2016		2	1	
64	and Net Present Value Method	17-09-2016		2	1	
65	Profitability index	19-09-2016		2	1	
66	Internal rate of return	20-09-2016		2	1	
67	Problems payback period	21-09-2016		2	1	1,3,5,7
68	Problems of ARR ,Problems of NPV	23-09-2016		2	1	
69	Problems of ARR ,Problems of NPV	24-09-2016		2	1	
70	Problems of ARR ,Problems of NPV	26-09-2016		2	1	
71	Problem Profitability index, Problems of IRR	27-09-2016		2	1	

72	Tutorial	28-09-2016		2	1	
73	**UNIT – V** **Introduction to Financial Accounting:**	01-10-2016		2	1	1,3,5,7
74	Double entry system	03-10-2016		2	1	
75	Book keeping	04-10-2016		2	1	
76	Journal, Ledger, Problems	05-10-2016		2	1	
77	Journal, Ledger, Problems	07-10-2016				
78	Trial Balance- Final Accounts with simple adjustments.	17-10-2016		2	1	
79	Problems	18-10-2016		2	1	
80	Problems	19-10-2016		2	1	
81	Problems	20-10-2016				
82	Problems	22-10-2016				
83	TUTORAIL	24-10-2016		2	1	
84	**Financial Analysis through ratios:** Importance, types	25-10-2016		2	1	
85	**Financial Analysis through ratios:** Importance, types	26-10-2016				
86	Liquidity Ratios, Activity Ratios, Capital structure Ratios and Profitability ratios	27-10-2016		2	1	
88	Problems for liquidity ratios	29-10-2016		2	1	

89	**Financial Analysis through ratios:** Importance, types	31-10-2016		2	1	
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92	**II-MID EXAMS**	03-11-2016			5	
93	**II-MID EXAMS**	04-11-2016			5	
94	**II-MID EXAMS**	05-11-2016			5	

Signature of the faculty

D.Kalyani

Head of the Department

Dr.A.ADISESHA REDDY

	LESSON PLAN	Date:
	Sub Code:L167 Sub Name: OBJECT ORIENTED PROGRAMMING THROUG C++ LAB Branch: CSE Year:III B.Tech Semester : V	10/08/2015 To 12/12/2015

L167 – OBJECT ORIENTED PROGRAMMING THROUG C++ LAB.

Lab : 3 Periods/week **Internal Marks : 25**

External Marks : 50

Credits: 2 **External Examination : 3 Hrs**

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1. Write a C++ program to find the sum of individual digits of a positive integer.
2. Write a C++ program to generate the first 'n' terms of the sequence. A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are formed by adding the preceding two terms in the sequence.
3. Write a C++ program to generate all the **prime numbers** between 1 and n. Where 'n' is a value supplied by the user.
4. Write a C++ programs that use both **recursive** and **non-recursive** functions

   a) To find the factorial of a given integer.

   b) To find the GCD of two given integers.

   c) To find the n^{th} Fibonacci number.
5. Write a C++ program to perform addition, suCSraction and multiplication operations on two complex numbers using **classes and objects.**
6. Write a C++ program to find out the total and average marks of 10 students using **Classes and objects?**
7. Write a C++ program to implement **static data members** and **static member functions**
8. Write a C++ program to implement the **matrix ADT using** a class. The operations Supported by this ADT are:

   a) Reading a matrix. c) Addition of matrices.

   b) Displaying a matrix d) Multiplication of matrices.

9. Write a C++ program to illustrate the usage of following:

   Default Constructor, **Parameterized** Constructor, **Copy** Constructor and **Destructor**

10. Write a C++ program that illustrates the following:

    a) **Friend** Function b) **inlin**e function

11. Write C++ programs that illustrates the usage of following forms of **inheritance.** (Exercise the access specified *protected* also)

    a) Single Inheritance b) Multiple Inheritance

    c) Multi level Inheritance d) Hierarchical Inheritance

12. Write a C++ program to count the lines, words and characters in a given text using standard library **string object.**

13. Write a C++ program that illustrates the concept of **Function over loading**?

14. Write a C++ program that overloads the **binary + operator** to concatenate two strings and to add two complex numbers.

15. Write a C++ program that overloads the **unary ++ operator** to increment each element of the given one dimensional array by '1'?

16. Write a C++ program that illustrates **run time polymorphism** by using virtual functions.

17. Write a **template** based C++ program to check whether the given item is existed in the array or not.

18. Write an example C++ program to illustrate the procedure of **exceptions handling.**

19. Write a C++ program to display the contents **of a text file.**

20. Write a C++ program which **copies the contents of one file to another.**

Pre requisite: C Language .

CEOs:

This course enables the students to execute programs in

1. Object Oriented concepts,C++ language .
2. Classes &Objects,Inheritance,Polymorphism.
3. Templates ,Streams,Files

Course Outcomes (CO's)

After undergoing this laboratory module, the student should be able to:

CO1: Able to Understand and Apply the concepts of Classes &Objects,friend function , constructors &destructors in program design.

CO2: Able to Design & implement various forms of inheritance, String classs,calling base class constructors polymorphism , Generic Programming

ession No	*Topics to be covered (Week wise)*	Date	Actual Date	No. of Hours	Deliver Method
1	Introduction C++ Sum of individual digits Febonacci sequence	11/08/15		3	DM5&6
2	Prime Numbers in a given range. Finding Factorial of given number using Recursive & Non Recursive Functions. Finding Gcd of two digits using Recursive & Non Recursive Functions	18/08/15		3	DM5&6
3	Finding nth term in a febonacci sequence using Recursive & Non Recursive Functions Programs on structures & classes Programs on Reference Variables . Call by reference	25/08/15		3	DM5&6
4	**Programs on operators** **Programs using manipulators** **Program to perform addition, subtraction and multiplication operations on** **a. two complex numbers using classes and objects.** **Program to find out the total and average marks of 10 students using**	01/09/15		3	DM5&6

	b. Classes and objects				
5	**Program that illustrates the following:** **a) Friend Function** **b) inline function** **Program to implement static data members** **c) and** **2. static member s** **a) functions**	08/09/15		3	DM5&6
6	Program to illustrate the usage of following: **1.** D**efault** Constructor, **Parameterized** Constructor **Copy** Constructor and **Destructor**	15/09/15		3	DM5&6
7	Program to implement the **matrix ADT using** a class. a. Reading a matrix. b. Addition of matrices. c)Displaying d) Multiplication of matrices	22/09/15		3	DM5&6
8	Programs that illustrates the usage of following forms of **inheritance.** a) Single Inheritance b) Multiple Inheritance b) Multi level Inheritance d) Hierarchical Inheritance	06/10/15		3	DM5&6
9	Write a C++ program to count the lines, words and characters in a given text using standard library **string object.**	13/10/15		3	DM5&6
11	Write a C++ program that overloads the **binary + operator** to concatenate two strings and to add two complex numbers. Write a C++ program that overloads the **unary ++ operator** to increment each element of the given one dimensional array by '1'?	27/09/15		3	DM5&6

12	Write a **template** based C++ program to check whether the given item is existed in the array or not. Write a C++ program that illustrates **run time polymorphism** by using virtual functions	03/11/15		3	DM5&6
13	**Stack & Queue ADT using templates**	10/11/15		3	DM5&6
14	1. Program to display the contents **of a text file.**	17/11/15		3	DM5&6
15	Program which **copies the contents of one file to another**	24/11/15		3	DM5&6
16	*Lab Internal Exam*	01/12/15		3	DM5&6
17	*Revision*	08/12/15		3	DM5&6

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

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

Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**

	LESSON PLAN	Date:
	Sub Code:L167 Sub Name: OBJECT ORIENTED PROGRAMMING THROUG C++ LAB Branch: CSE Year:III B.Tech Semester : V	10/08/2015 To 12/12/2015

L167 – OBJECT ORIENTED PROGRAMMING THROUG C++ LAB.

Lab : 3 Periods/week **Internal Marks : 25**

External Marks : 50

Credits: 2 **External Examination : 3 Hrs**

---

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2. Write a C++ program to generate the first 'n' terms of the sequence. A Fibonacci sequence is defined as follows: the first and second terms in the sequence are 0 and 1. Subsequent terms are formed by adding the preceding two terms in the sequence.
3. Write a C++ program to generate all the **prime numbers** between 1 and n. Where 'n' is a value supplied by the user.
4. Write a C++ programs that use both **recursive** and **non-recursive** functions

   a) To find the factorial of a given integer.

   b) To find the GCD of two given integers.

   c) To find the n^{th} Fibonacci number.
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6. Write a C++ program to find out the total and average marks of 10 students using **Classes and objects?**
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    a) **Friend** Function b) **inlin**e function

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15. Write a C++ program that overloads the **unary ++ operator** to increment each element of the given one dimensional array by '1'?

16. Write a C++ program that illustrates **run time polymorphism** by using virtual functions.

17. Write a **template** based C++ program to check whether the given item is existed in the array or not.

18. Write an example C++ program to illustrate the procedure of **exceptions handling.**

19. Write a C++ program to display the contents **of a text file.**

20. Write a C++ program which **copies the contents of one file to another.**

Pre requisite: C Language .

CEOs:

This course enables the students to execute programs in

4. Object Oriented concepts,C++ language .
5. Classes &Objects,Inheritance,Polymorphism.
6. Templates ,Streams,Files

Course Outcomes (CO's)

After undergoing this laboratory module, the student should be able to:

CO1: Able to Understand and Apply the concepts of Classes &Objects,friend function , constructors &destructors in program design.

CO2: Able to Design & implement various forms of inheritance, String classs,calling base class constructors polymorphism , Generic Progr

ession No	*Topics to be covered (Week wise)*	Date	Actual Date	No. of Hours	Deliver Method
1	Introduction C++ Sum of individual digits Febonacci sequence	11/08/15		3	DM5&6
2	Prime Numbers in a given range. Finding Factorial of given number using Recursive & Non Recursive Functions. Finding Gcd of two digits using Recursive & Non Recursive Functions	18/08/15		3	DM5&6
3	Finding nth term in a febonacci sequence using Recursive & Non Recursive Functions Programs on structures & classes Programs on Reference Variables . Call by reference	25/08/15		3	DM5&6
4	**Programs on operators** **Programs using manipulators** **Program to perform addition, subtraction and multiplication operations on** **c. two complex numbers using classes and objects.** **Program to find out the total and average marks of 10 students using**	01/09/15		3	DM5&6

	d. Classes and objects				
5	**Program that illustrates the following:** **b) Friend Function** **c) inline function** **Program to implement static data members** **d) and** **3. static member s** **a) functions**	08/09/15		3	DM5&6
6	Program to illustrate the usage of following: **2.** D**efault** Constructor, **Parameterized** Constructor **Copy** Constructor and **Destructor**	15/09/15		3	DM5&6
7	Program to implement the **matrix ADT using** a class. c. Reading a matrix. d. Addition of matrices. c)Displaying d) Multiplication of matrices	22/09/15		3	DM5&6
8	Programs that illustrates the usage of following forms of **inheritance.** c) Single Inheritance b) Multiple Inheritance d) Multi level Inheritance d) Hierarchical Inheritance	06/10/15		3	DM5&6
9	Write a C++ program to count the lines, words and characters in a given text using standard library **string object.**	13/10/15		3	DM5&6
11	Write a C++ program that overloads the **binary + operator** to concatenate two strings and to add two complex numbers. Write a C++ program that overloads the **unary ++ operator** to increment each element of the given one dimensional array by '1'?	27/09/15		3	DM5&6

12	Write a **template** based C++ program to check whether the given item is existed in the array or not. Write a C++ program that illustrates **run time polymorphism** by using virtual functions	03/11/15		3	DM5&6
13	**Stack & Queue ADT using templates**	10/11/15		3	DM5&6
14	2. Program to display the contents **of a text file.**	17/11/15		3	DM5&6
15	Program which **copies the contents of one file to another**	24/11/15		3	DM5&6
16	*Lab Internal Exam*	01/12/15		3	DM5&6
17	*Revision*	08/12/15		3	DM5&6

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

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

Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**

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	LESSON PLAN	Date:
	Sub. Name : Object Oriented Programming Through C++	10/08/2015
	Branch: CSE, Semester & Sections:III & A	To 12//12/2015

S324 – OBJECT ORIENTED PROGRAMMING THROUGH C++

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

UNIT-I

Overview of C++:

Object Oriented paradigms, Data abstraction/control abstartction,OOPSprinciples,Origin of C++, Sample C++ program, dynamic initialization of variables , new and deleteoperators,C++ keywords,General form of C++ program, Type casting, Introducing C++ classes,Difference between class and structure.

UNIT - II

Classes and Objects: Defining Classes in C++, accessing class members, access specifiers(Public and Private),defining member functions, static data members, static member functions, friend functions, friend classes, inline functions, nested classes, passing objects to functions, returning objects, object assignment, Array of objects, Constructor and Destructors

UNIT – III

Inheritance: Base-class accesscontrol,accessspecifier (Protected), scope rules, Inheriting Multiple Base classes,constructors,destructors&inheritance passing parameters to base class constructors. Virtual base class.**String class**-Usage of standard library string class with example programs.

UNIT – IV

Polymorphism:

Pointers: Pointers to objects, 'this' Pointer, Pointers to derived types.

Operator Overloading: Overloading Unary Operators, and Overloading Binary Operators using friend functions, Function Overloading,

Virtual functions: Pure Virtual Functions, Abstract classes

Templates: Introduction, simple generic classes & generic function, simple example programs. STL - List, Vector, Array

UNIT – V

Files and Exception Handling:

Exception Handling: Fundamentals, exception handling options.

C++ I/O Systems Basics: C++ Streams, C++ Stream classes, Unformatted I/O Operations, Formatted I/O Operations, Formatting using Manipulators. C++

File I/O: Introduction, Classes for file stream Operations, Opening and closing a file, detecting end-of-file

TEXT BOOK

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Prerequisite:Learning C language .

Course Educational Objectives:

This course enables the students to know about

7. Object Oriented concepts,C++ language .
8. Classes &Objects,Inheritance,Polymorphism.
9. Templates ,Streams,Files

Course Outcomes(CO's):

After completion of the course, students will able to:

CO1: Able to Understand OOPs Concept ,C++ language features. Able to Understanding and Applying various Datatypes, Operators,Conversions in program design.

CO2: Able to Understand and Apply the concepts of Classes &Objects,friend function , constructors &destructors in program design.

CO3: Able to Design & implement various forms of inheritance, String classs,calling base class constructors .

CO4: Able to Apply & Analyze operator overloading, runtime polymorphism , Generic Programming.

CO5: Able to Analyse and explore various Stream classes, I/O operations and exception handling

Detailed Lesson Plan

S.NO	DATE	TOPIC TO BE COVERED	Actual Date	No. of HOURS	Content delivery Methods
	UNIT-I Overview of C++:				
1	10/08/15	OOP Paradigm		1	DM1
2	11/08/15	OOPS principles		1	DM1
3	12/08/15	OOPS principles		1	DM1
4	13/08/15	C++ Overview		1	DM1
5	14/08/15	C++ Characteristics		1	DM6
6	17/08/15	Types,operators,typecasting		1	DM6
7	18/08/15	dynamic initialization of variables		1	DM1
8	19/08/15	*new* and *delete* operators		1	DM6
9	20/08/15	Difference between class and structure, declaration of variables		1	**DM2**
10	21/08/15	**Tutorial-1**		1	DM1
		UNIT-II Classes and Objects			
11	24/08/15	Defining Classes in C++, accessing class members,		1	DM1
12	25/08/15	access specifies(Public and Private),defining member functions,		1	DM6
13	26/08/15	static data members, static member functions		1	DM1
14	27/08/15	Friend functions, friend classes,		1	DM1
15	28/08/15	Friend functions		1	DM6
16	31/08/15	**Tutorial-2**		1	DM6
17	01/09/15	inline functions		1	DM1
18	02/09/15	object assignment		1	**DM2**
19	03/09/15	passing objects to functions		1	DM6
20	04/09/15	Returnibg objects		1	DM2
21	07/09/15	Array of objects		1	DM1
22	08/09/15	Array of objects		1	DM6
23	09/09/15	Constructor and Destructor		1	DM6
24	10/09/15	Constructor and Destructor		1	DM1

25	11/09/15	Constructor and Destructor		1	**DM2**
26	14/09/15	**Tutorial-3**		1	DM6
	UNIT-III Inheritance				
27	15/09/15	Base class, derived class, access specifier (Protected),		1	DM1
28	16/09/15	scope rules, base class		1	DM1
29	18/09/15	scope rules, base class		1	DM1
30	21/09/15	virtual base class, single inheritance		1	DM1
31	22/09/15	virtual base class, single inheritance		1	DM1
32	23/09/15	multiple inheritance, multilevel inheritance,		1	DM1
33	24/09/15	multiple inheritance, multilevel inheritance,		1	DM1
34	25/09/15	**Tutorial-4**		1	DM1
35	28/09/15	**MID-I EXAMS**			
36	29/09/15				
37	30/09/15				
38	01/10/15				
39	03/10/15				
40	05/10/15	hierarchical inheritance and hybrid inheritance, calling base class constructors		1	DM1
41	06/10/15	calling base class constructors		1	DM1
42	07/10/15	**String class-**Usage of standard library *string class* with example programs		1	DM1
43	08/10/15	String class		1	DM6
44	12/10/15	String class examples		1	DM1
45	13/10/15	TUTORIAL-5		1	DM1
	UNIT-IV Polymorphism				
46	14/10/15	**Polymorphism:**		1	DM6
47	15/10/15	Pointers, Pointers to objects		1	DM1
48	16/10/15	'this' Pointer, Pointers to derived Classes.		1	DM6

49	26/10/15	Concept of Polymorphism, Compile time Polymorphism:		1	**DM2**
50	27/10/15	Operator Overloading			DM6
51	28/10/15	Overloading Unary Operators,			DM6
52	29/10/15	Overloading Binary Operators,.			
53	30/10/15	Function Overloading **Run time Polymorphism:** Virtual functions,		1	DM6
54	02/11/15	Pure Virtual Functions		1	DM1
55	03/11/15	**GENERIC PROGRAMMING**		1	DM6
56	04/11/15	**Templates**: Introduction, Class Templates.		1	DM6
57	05/11/15	Function Templates		1	DM1
58	06/11/15	Function Templates		1	DM1
59	09/11/15	Lists vectors		1	DM6
60	10/11/15	Arrays		1	DM6
61	12/11/15	Tutorial-6		1	
	Unit-V Files & Exception Handling				
62	13/11/15	**Exception handling: Introduction**		1	DM1
63	16/11/15	Mechanism, try, throw and catch		1	DM1
64	17/11/15	Catching all Exceptions, Multiple catches		1	DM6
65	18/11/15	C++ Streams, Stream Classes		1	DM1
66	19/11/15	C++ Streams, Stream Classes		1	DM6
67	20/11/15	Unformatted I/O Operations		1	**DM2**
68	23/11/15	**Formatted I/O Operations**		1	DM6
69	24/11/15	Formatted using manipulators		1	DM6
70	26/11/15	**C++ Files: Introduction**		1	DM6
71	27/11/15	Opening and closing of a file		1	DM6
72	30/10/15	**Detecting end of file,** Programs on files			DM6
73	01/12/15	Tutorial-7		1	
74	02/12/15	Revision			

75	to 11/12/15				
74	14/12/15 to 19-12-15	MID-II			
75					
76					
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78					

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

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Signature			
	Name of the Faculty	**Name of Course Co-ordinator**	**HOD**

	LESSON PLAN	Date:
	Sub. Name : Object Oriented Programming Through C++	10/08/2015
	Branch: CSE, Semester & Sections:III & B	To 12//12/2015

S324 – OBJECT ORIENTED PROGRAMMING THROUGH C++

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

UNIT-I

Overview of C++:

Object Oriented paradigms, Data abstraction/control abstartction,OOPSprinciples,Origin of C++, Sample C++ program, dynamic initialization of variables , new and deleteoperators,C++ keywords,General form of C++ program, Type casting, Introducing C++ classes,Difference between class and structure.

UNIT - II

Classes and Objects: Defining Classes in C++, accessing class members, access specifiers(Public and Private),defining member functions, static data members, static member functions, friend functions, friend classes, inline functions, nested classes, passing objects to functions, returning objects, object assignment, Array of objects, Constructor and Destructors

UNIT – III

Inheritance: Base-class accesscontrol,accessspecifier (Protected), scope rules, Inheriting Multiple Base classes,constructors,destructors&inheritance passing parameters to base class constructors. Virtual base class.**String class**-Usage of standard library string class with example programs.

UNIT – IV

Polymorphism:

Pointers: Pointers to objects, 'this' Pointer, Pointers to derived types.

Operator Overloading: Overloading Unary Operators, and Overloading Binary Operators using friend functions, Function Overloading,

Virtual functions: Pure Virtual Functions, Abstract classes

Temlates: Introduction, simple generic classes & generic function, simple example programs.STL-List, Vector, Array

UNIT – V

Files and Exception Handling:

Exception Handling: Fundamentals, exception handling options.

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