

# **SRI VASAVI ENGINEERING COLLEGE (Autonomous)**

**(Permanent Affiliation to JNTUK, Kakinada),  
PEDATADEPALLI, TADEPALLIGUDEM-534 101**

**A.Y: 2023-24**

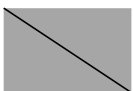
## **III SEM AIML Handbook**



**Department of**

**Artificial Intelligence & Machine Learning**

**Pedatadepalli, Tadepalligudem-534101, A.P**



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**INSTITUTE**



**VISION MISSION**

# INSTITUTE VISION AND MISSION

## VISION

To be a premier technological institute striving for excellence with global perspective and commitment to the nation.

## MISSION

- To produce engineering graduates of professional quality and global perspective through Learner Centric Education.
- To establish linkages with government, industry and research laboratories to promote R&D activities and to disseminate innovations.
- To create an eco-system in the institute that leads to holistic development and ability for life-long learning..

# ACADEMIC CALENDAR

✉ : [principal@srivasaviengg.ac.in](mailto:principal@srivasaviengg.ac.in)  
[svec.a8@gmail.com](mailto:svec.a8@gmail.com)



☎ : 08818- 284344, 355

## **SRI VASAVI ENGINEERING COLLEGE (AUTONOMOUS)**

(Sponsored by Sri Vasavi Educational Society)  
(Approved by AICTE, New Delhi & Permanently affiliated to JNTUK, Kakinada)  
(Accredited by NAAC with 'A' Grade, Recognized by UGC under section 2(f) & 12(B))  
(NBA Accreditation to B.Tech., EEE,CSE, ME and ECE Branches for 3 Years )  
Pedatadepalli, **TADEPALLIGUDEM** – 534 101. W.G.Dist. (A.P)

Principal's Office  
Date: 26-07-2023

### **Academic Calendar** **For II B.Tech (III and IV Semesters), Academic Year 2023-24**

III Semester			
Description	From	To	Weeks
Commencement of Class Work	28.08.2023		
I Unit of Instructions	28.08.2023	21.10.2023	8 W
I Mid Examinations	23.10.2023	28.10.2023	1 W
II Unit of Instructions	30.10.2023	23.12.2023	8 W
II Mid Examinations	25.12.2023	30.12.2023	1 W
Preparation & Practicals	01.01.2024	06.01.2024	1 W
End Examinations	08.01.2024	20.01.2024	2 W
Commencement of Next Semester Class Work ( IV Semester )	22.01.2024		
IV Semester			
I Unit of Instructions	22.01.2024	16.03.2024	8 W
I Mid Examinations	18.03.2024	23.03.2024	1 W
II Unit of Instructions	25.03.2024	18.05.2024	8 W
II Mid Examinations	20.05.2024	25.05.2024	1 W
Preparation & Practicals	27.05.2024	01.06.2024	1 W
End Examinations	03.06.2024	15.06.2024	2 W
Summer Internship / Mini Project	17.06.2024	20.07.2024	
Commencement of Next Semester Class Work ( V Semester )	22.07.2024		

  
PRINCIPAL

Copy to : ALL

#### **Vision**

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#### **Mission**

- To produce Engineering graduates of professional quality and global perspective through learner-centric education.
- To establish linkages with government, industry and Research laboratories to promote R&D activities and to disseminate innovations.
- To create an eco-system in the institute that leads to holistic development and ability for life-long learning.



# SRI VASAVI ENGINEERING COLLEGE (Autonomous)

Pedatadepalli, TADEPALLIGUDEM-534 101, W.G. Dist.

Department of Artificial Intelligence & Machine Learning



## CLASS CONSOLIDATED TIME TABLE

**Class:** III Semester

**w.e.f:**28-08-2023

**Section:** A

**Class Coordinator:** M V V Gopala Krishna Murthy

**Room No:**B-403

Periods	1	2	3	4	1:00P M 2:00PM	5	6	7
Time Day	(09.30 AM-10.30 AM)	(10.30 AM-11.20 AM)	(11.20 AM-12.10 PM)	(12.10 PM-01.00 PM)		(02.00 PM-02.50 PM)	(02.50 PM-03.40 PM)	(03.40 PM-04.30 PM)
<b>Mon</b>	DBMS		MEFA		<b>Lunch Break</b>	APP	PT	<b>LIB</b>
<b>Tue</b>	LSS LAB			LSS		MFCS		APP
<b>Wed</b>	PCS-I	DBMS		APP		PT	MFCS	
<b>Thu</b>	PT	PCS-I		APP		<b>APP LAB</b>		
<b>Fri</b>	DBMS	DBMS LAB				MEFA		SPORTS
<b>Sat</b>	MEFA	MFCS	APP			PT	DBMS	

**Section:** B

**Class Coordinator:** Mr. K. Lakshmi Narayana

**Room No:** B-302

Periods	1	2	3	4	1:00P M 2:00PM	5	6	7
Time Day	(09.30 AM-10.30 AM)	(10.30 AM-11.20 AM)	(11.20 AM-12.10 PM)	(12.10 PM-01.00 PM)		(02.00 PM-02.50 PM)	(02.50 PM-03.40 PM)	(03.40 PM-04.30 PM)
<b>Mon</b>	MFCS		PT		<b>Lunch Break</b>	DBMS		APP
<b>Tue</b>	APP	MEFA	DBMS	PT		<b>DBMS LAB</b>		
<b>Wed</b>	LSS LAB			LSS		DBMS	APP	<b>PCS-I</b>
<b>Thu</b>	MEFA	DBMS	PT	<b>LIB</b>		PT	MEFA	<b>SPORTS</b>
<b>Fri</b>	APP		MEFA	MFCS		<b>APP LAB</b>		
<b>Sat</b>	DBMS	MEFA	PCS-I			APP	MFCS	

### Staff Details:

<i>S. No.</i>	<i>Course Code</i>	<i>Course Name</i>	<i>Section-A</i>	<i>Section-B</i>
1.	V20MBT51	Managerial Economics and Financial Analysis <b>(MEFA)</b>	Mr. D Naveen Kumar	Mr. D Naveen Kumar
2.	V20MAT11	Probability Theory <b>(PT)</b>	Mr.G.S.Prasanthi	Mrs. B V D Santhi Lakshmi
3.	V20MAT07	Mathematical Foundation of Computer Science <b>(MFCS)</b>	Mrs. P. Ujawala Sai	Mrs. P. Ujawala Sai
4.	V20AIT02	Advanced Python Programming <b>(APP)</b>	Mr. K. Lakshmi Narayana	Mr. K. Lakshmi Narayana
5.	V20AIT03	Database Management Systems <b>(DBMS)</b>	M V V Gopala Krishna Murthy	M V V Gopala Krishna Murthy
6.	V20AIL03	Advanced Python Programming Lab <b>(APP Lab)</b>	Mr. K. Lakshmi Narayana	Mr. K. Lakshmi Narayana
7.	V20AIL04	Linux Shell Scripting Lab <b>(LSS Lab)</b>	Ms. D Sasi Rekha	Ms. D Sasi Rekha
8.	V20AIL05	Database Management Systems Lab <b>(DBMS Lab)</b>	M V V Gopala Krishna Murthy	M V V Gopala Krishna Murthy
9.	V20CSP01	Community Service Project	Mr. S Kumar Reddy Mallidi	Ms. G NagaVallika
10.	V20SOC01	Skill Oriented Course-I	<i>As Part of Curriculum you have to study <b>Skill Oriented Course-I</b> also, It will be conducted <b>any 1 WEEK</b> during the semester.</i>	
11.	V20ENT02	Professional Communication Skills –I <b>(PCS-I)</b>	Dr. T Sujani / Mr. G Srinivasav Rao	Mr. G Srinivasav Rao / Mr. Ch Mutyala Rao



**Head of the Department**

*Head of the Department  
Dept. of Computer Science & Engineering  
Sri Vasavi Engineering College  
TADEPALLIGUDEM-534 101*

# **COURSE STRUCTURE**

## **III Semester**

### **SEMESTER-III (SECOND YEAR)**

S.No.	Code	Name of the Course		L	T	P	C
1	V20MBT51	Managerial Economics and Financial Analysis	HSS	3	0	0	3
2	V20MAT11	Probability Theory	BSC	3	0	0	3
3	V20MAT07	Mathematical Foundation of Computer Science	BSC	3	0	0	3
4	V20AIT02	Advanced Python Programming	PCC	3	0	0	3
5	V20AIT03	Database Management Systems	PCC	3	0	0	3
6	V20AIL03	Advanced Python Programming Lab	PCC	0	0	3	1.5
7	V20AIL04	Linux Shell Scripting Lab	PCC	0	0	3	1.5
8	V20AIL05	Database Management Systems Lab.	PCC	0	0	3	1.5
9	V20SOC01	Skill Oriented Course-I*	SO	1	0	2	2
10	V20ENT02	Professional Communication Skills -I	MNC	2	0	0	0
<b>Total:</b>				<b>18</b>	<b>0</b>	<b>11</b>	<b>21.5</b>

**Total Contact Hours: 29**

**Total Credits: 21.5**





**LESSON  
PLANS**

# Managerial Economics and Financial Analysis

Academic Year: 2023-24

Programme: B.Tech

Year/ Semester: III

Section: AIM

Name of the Course: Managerial Economics and Financial Analysis

Course Code: V20MBT51

## LESSON PLAN

Course Outcomes (Along with Knowledge Level):

After completion of this course, Student will be able to:

S. No.	CO. No.	Course Outcome	BTL
1.	CO1	Estimate the demand for a product and the relationship between price and demand	K2
2.	CO2	Interpret production concept, least cost combinations and various costs concepts in decision making.	K3
3.	CO3	Differentiate various Markets and Pricing methods along with Business Cycles.	K2
4.	CO4	Prepare financial statements and its analysis.	K3
5.	CO5	Assess various investment project proposals with the help of Capital Budgeting techniques for decision making	K3

Text Books:

1. Dr. N. AppaRao, Dr. P. Vijay Kumar: 'Managerial Economics and Financial Analysis', Cengage Publications, New Delhi – 20112.
2. Dr. A. R. Aryasri – Managerial Economics and Financial Analysis, TMH 2011

Reference Books:

1. Dr. B. Kuberudu and Dr. T. V. Ramana: Managerial Economics & Financial Analysis, Himalaya Publishing House, 2014
2. S. A. Siddiqui; A. S. Siddiqui: Managerial Economics and Financial Analysis, New Age International Publishers, 2012.

Targeted Proficiency and attainment Levels (for each Course Outcome):

Cos		CO1	CO2	CO3	CO4	CO5
Targeted Proficiency Level		60	60	60	60	60
Targeted level of Attainment	Level 3	60	60	60	60	60
	Level 2	50	50	50	50	50
	Level 1	40	40	40	40	40

**Lecture Plan:**

S.No	Course Outcome	Intended learning outcomes (ILO)	Knowledge level of ILO	No. of Hours required	Pedagogy	Teaching aids
		<b>UNIT–I:Introduction to managerial economics</b>		11		
1	Estimate the demand for a product and the relationship between price and demand.	Define managerial economics	K1	1	Lecture Discuss	Blackboard
2		Describe ME with other disciplines	K1	1	Lecture	Blackboard
3		Explain Nature and scope of managerial economics	K2	1	Lecture	Blackboard
4		Define Demand	K1	1	Lecture Discuss	Blackboard
5		Describe law of demand	K2	1	Lecture	Blackboard
6		Explain Elasticity of demand	K2	2	Lecture	Blackboard
7		Find the of elasticity of demand	K2	2	Lecture	Blackboard
8		Explain Demand forecasting, methods.	K2	2	Lecture Discuss	Blackboard
		<b>UNIT–II: Production analysis and cost analysis</b>		8		
1	Interpret production concept, least cost combinations and various costs concepts	State Production function	K1	1	Lecture	Blackboard
2		State Isocost	K1	1	Lecture	Blackboard
3		State Iso quants	K1	1	Lecture	Blackboard
4		Explain Cob-Douglas production function	K2	1	Lecture Discuss	Blackboard
5		Describe economies of scale	K2	1	Lecture	Blackboard
		Enumerate various cost concepts	K1	1	Lecture	Blackboard
		Solve break even analysis problems	K3	2	Lecture	Blackboard
		<b>UNIT–III: market structures, Forms of Business organizations</b>		14		
1	Differentiate various Markets and Pricing methods along with Business Cycles.	Describe Different types of market structures	K1	3	Lecture	Blackboard
2		Explain Price-output determination under different market structures	K2	4	Lecture	Blackboard
3		ExplainPricing objectives, Cost and demand based Pricing methods	K2	2	Lecture	Blackboard
4		Describe competition, strategy based pricing methods.	K2	2	Lecture	Blackboard
5		State the meaning and features of business cycles	K1	1	Lecture	Blackboard
6		Describe the Phases of business Cycles.	K2	2	Lecture	Blackboard

		<b>Unit–IV: financial accounting</b>		13		
1	Prepare the financial statements to gains	Describe double entry system	K2	3	Lecture	Blackboard
2		Preparation of financial statements	K3	4	Lecture	Blackboard
3		Interpretation of financial statements by using, Ratios.	K3	6	Lecture	Blackboard
		<b>UNIT–V: capital budgeting</b>		08		
1	Assess various investment project proposals with the help of	Define Capital	K1	1	Lecture	Blackboard
2		Enumerate types of capital	K1	1	Lecture	Blackboard
3		Explain capital budgeting, Process	K2	4	Lecture	Blackboard
4		Apply capital budgeting techniques	K3	4	Lecture	Blackboard

• **Total No. of Classes: 58**

# Mathematical Foundation of Computer Science

Academic Year: 2023-24

Year/ Semester: III

Name of the Course: Mathematical Foundation of Computer Science

Programme: B.Tech

Section: AIM

Course Code: V20MAT07

## LESSON PLAN

**Course Outcomes** (Along with Knowledge Level):

After completion of this course, Student will be able to:

S. No	CO.No	Course Outcomes	BTL
1	CO1	Demonstrate the concepts associated with propositions and mathematical logic	K3
2	CO2	Demonstrate the basic concepts associated with relations, functions and their applications	K3
3	CO3	Solve recurrence relations using various methods	K3
4	CO4	Apply techniques of graphs for real-time problems	K3
5	CO5	Construct minimal spanning tree by using different algorithms	K3

### **TEXT BOOKS:**

1. Discrete Mathematical Structures with Applications to Computer Science, J. P. Tremblay and P. Manohar, 1st Edition, Tata McGraw Hill.
2. Discrete Mathematics and its Applications with Combinatorics and Graph Theory, K. H. Rosen, 7th Edition, Tata McGraw Hill.
3. Discrete Mathematics for Computer Scientists and Mathematicians, J. L. Mott, A. Kandel, T.P. Baker, 2nd Edition, Prentice Hall of India.

### **REFERENCE BOOKS:**

1. Elements of Discrete Mathematics -A Computer Oriented Approach, C. L. Liu and D. P. Mohapatra, 3rd Edition, Tata McGraw Hill.
2. Discrete Mathematics with Combinatorics and Graph Theory, Santha, 1st Edition Cengage Learning.

Targeted Proficiency and attainment Levels (for each Course Outcome):

Cos		CO1	CO2	CO3	CO4	CO5
Targeted Proficiency Level		60	60	60	60	60
Targeted level of Attainment	Level 3	60	60	60	60	60
	Level 2	50	50	50	50	50
	Level 1	40	40	40	40	40

**Lecture Plan:****UNIT-1**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1	CO1	Dissemination of Vision, Mission, PEOs, POs,PSOs		1	Lecture	ICT
2		<b>Mathematical Logic:</b> Define Statements and their Notations, Connectives	K1	1	Lecture	BB
3		Describe Well Formed Formulas, Truth Tables, Tautologies	K2	1	Lecture with Discussion	BB
4		Explain equivalence of Formulas	K2	2	Lecture	BB
5		State duality Law, Tautological implications	K1	1	Lecture with Discussion	BB
6		Explain normal forms	K2	2	Lecture	BB
7		Illustrate theory of inference for statement calculus	K3	2	Lecture	BB
8		Practice indirect method of proof	K3	2	Lecture	BB
9		Identify statement functions, variables and quantifiers, free and bound Variables	K2	1	Lecture	BB
10		Recognize theory for predicate calculus- Predicates, quantifiers, universe of discourse	K2	2	Lecture	ICT
11		Total		<b>15</b>		

**UNIT-2**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1	CO 2	<b>Set Theory and Relations:</b> Define basic concepts	K1	1	Lecture	ICT
2		Illustrate operations on binary sets	K2	1	Lecture	ICT
3		Use principle of inclusion and exclusion	K3	1	Lecture	ICT
4		Describe Relation and properties of binary relations on a set and Transitive Closure	K2	1	Lecture	BB
5		Sketch out relation matrix and digraph	K3	1	Lecture with Discussion	BB

6		Practice equivalence, and partial ordering relations	K3	2	Lecture with Discussion	BB
7		Construct hasse diagrams, lattice and state its properties.	K3	2	Lecture	BB
8		Illustrate Functions, bijective functions, composition of functions	K3	1	Lecture	BB
9		Total		<b>10</b>		

### UNIT-3

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1	CO3	<b>Recurrence Relations</b> Explain Generating of functions	K2	2	Lecture	ICT
2		Calculate Coefficient of generating functions	K3	2	Lecture	BB
3		Explain Recurrence relations	K2	1	Lecture with discussion	BB
4		Solve homogeneous Recurrence relations by method of substitution	K3	1	Lecture	ICT
5		Solve homogeneous Recurrence relations by Generating functions	K3	2	Lecture with discussion	BB
6		Solve Recurrence relations by method of characteristic roots	K3	2	Lecture with discussion	BB
7		Solve inhomogeneous recurrence relations	K3	3	Lecture	BB
8			Total		<b>13</b>	

### UNIT-4

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1	CO 4	Describe basic concepts of graphs	K1	2	Lecture with Discussion	ICT
2		Illustrate matrix representation of graphs, Adjacency matrices, Incidence matrices	K2	1	Lecture	BB
3		Find subgraph, isomorphic graphs, paths and circuits	K3	2	Lecture	ICT
4		Demonstrate Eulerian and Hamiltonian Graphs, Multigraphs	K3	2	Lecture with Discussion	BB
5		Use Euler's Formula for Planar Graphs	K3	1	Lecture with Discussion	BB
6		Explain Graph Colouring and Chromatic Number	K2	1	Lecture with Discussion	BB
7		Total			<b>9</b>	

### UNIT-5

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1	CO 5	Explain tree and spanning trees	K2	2	Lecture	BB
2		Sketch Minimal spanning trees using Kruskal's algorithms	K3	2	Lecture	BB
3		Sketch Minimal spanning trees using Prim's algorithms	K3	2	Lecture	BB
4		Construct BFS	K3	2	Lecture	BB
5		Construct DFS	K3	2	Lecture	BB
6		Explain binary trees	K2	2	Lecture	BB
		Explain Planar Graphs	K2	1	Lecture	BB
9		Total			<b>13</b>	



Total No. of Classes: 60

## Probability Theory

Academic Year: 2023-24

Year/ Semester: III

Name of the Course: Probability Theory

Programme: B.Tech

Section: AIM

Course Code: V20MAT11

### LESSON PLAN

**COURSE OUTCOMES (Along with Knowledge Level):**

After completion of this course, the students will be able to:

S.No.	CO No.	Course Outcome	BTL
1.	CO1	Find the Expectation of Random variables	K3
2.	CO2	Apply probability distribution to real time problems	K3
3.	CO3	Apply good estimators to various parameters	K3
4.	CO4	Apply the principles of Statistical Inference to practical problems on large samples	K3
5.	CO5	Apply the principles of Statistical Inference to practical problems on small samples	K3

#### Text Books:

1. **B. V. Ramana**, A text Book of Engineering Mathematics, Tata McGraw Hill.
2. **Miller & Freund's**, Probability & Statistics for Engineers – Eighth Edition, Richard. A. Johnson

#### Reference Books:

1. **S. Ross**, "A First Course in Probability", Pearson Education India, 2002.
2. **Dr.T.S.R.Murthy**, Probability and Statistics for Engineers, BS Publications.
3. **T. Veerarajan**, "Engineering Mathematics", Tata McGraw-Hill, New Delhi, 2010.

Targeted Proficiency and attainment Levels (for each Course Outcome):

Cos	CO1	CO2	CO3	CO4	CO5	CO6
Targeted Proficiency Level	65	65	65	65	65	65
Targeted level of Attainment	65	65	65	65	65	65
	60	60	60	60	60	65
	55	55	55	55	55	60

### Lecture Plan:

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
		<b>UNIT-I: Random variables and Expectation</b>	<b>K3</b>	<b>10</b>		
1	<b>CO1</b>	Define random variables: discrete and continuous with examples	K1	1	Lecture method	Black Board
2	<b>CO1</b>	Explain discrete probability distribution, probability function, density function and their properties	K2	1	Lecture method	Black Board
3	<b>CO1</b>	Explain expectation , mean , variance, standard deviation of a probability distribution	K2	1	Lecture method	Black Board
4	<b>CO1</b>	Find the probabilities using discrete probability function	K3	1	Lecture method	Black Board
5	<b>CO1</b>	Calculate expectation , mean , variance and standard deviation of discrete distribution	K3	1	Lecture method	Black Board
6	<b>CO1</b>	Explain continuous probability distribution, probability function, density function and their properties	K2	1	Lecture method	Black Board
7	<b>CO1</b>	Find the probabilities using continuous probability function	K3	1	Lecture method	Black Board
8	<b>CO1</b>	Find the mean, median , mode , variance and standard deviation of continuous probability distribution	K3	1	Lecture method	Black Board
9	<b>CO1</b>	Explain moments and Chebyshev's Inequality	K2	1	Lecture method	Black Board
10	<b>CO1</b>	Find moments of given data	K3	1	Lecture method	Black Board
		<b>UNIT II: Probability Distributions</b>	<b>K3</b>	<b>12</b>		
11	<b>CO2</b>	Explain Binomial distribution and its properties	K2	2	Lecture method	Black Board
12	<b>CO2</b>	Find the probability using	K3	1	Lecture	Black

		Binomial distribution			method	Board
13	CO2	Explain Poisson distribution and its properties	K2	1	Lecture method	Black Board
14	CO2	Find the probability using Poisson distribution	K3	1	Lecture method	Black Board
15	CO2	Explain Normal distribution and its properties	K2	1	Lecture method	Black Board
16	CO2	Find the probabilities by using Normal distribution	K3	2	Lecture method	Black Board
17	CO2	Find the probabilities by using Normal distribution	K3	1	Lecture method	Black Board
18	CO2	Explain Exponential distribution and weibull distribution	K2	1	Lecture method	Black Board
19	CO2	Explain Gamma distribution	K2	1	Lecture method	Black Board
20	CO2	Find the probabilities using Exponential, Weibull and Gamma distributions	K3	1	Lecture method	Black Board
	CO3	<b>UNIT-III: Sampling Distribution and Estimation</b>	<b>K3</b>	<b>12</b>		
21	CO3	Define population and samples, sampling theory	K1	1	Lecture method	Black Board
22	CO3	Define sampling distribution of means ( $\sigma$ known)	K1	1	Lecture method	Black Board
23	CO3	Calculate mean, variance and standard deviations of sampling distributions of means	K3	1	Lecture method	Black Board
24	CO3	Calculate mean, variance and standard deviations of sampling distributions of means	K3	2	Lecture method	Black Board
25	CO3	Define sampling distribution of mean ( $\sigma$ unknown)	K1	1	Lecture method	Black Board
26	CO3	Define sampling distribution of mean ( $\sigma$ unknown)	K1	1	Lecture method	Black Board
27	CO3	Explain t- distribution, F-distribution and chi-square distribution	K2	1	Lecture method	Black Board
28	CO3	Explain Estimation,	K2	1	Lecture	Black

		criteria of a good estimator , point and interval estimation			method	Board
29	CO3	Define the maximum error and confidence interval for the mean of a populations	K1	2	Lecture method	Black Board
30	CO3	Estimate the maximum error and the confidence interval for the mean of a population using various distributions	K2	1	Lecture method	Black Board
		<b>UNIT-IV Tests of Hypothesis</b>	K3	<b>10</b>		
31	CO4	Define Null and alternative Hypothesis	K1	1	Lecture	Black Board
32	CO4	Explain Type-1, Type II errors and one tail and two tail test	K2	2	Lecture method	Black Board
33	CO4	Examine the hypothesis concerning mean and proportion using z-test	K3	2	Lecture method	Black Board
34	CO4	Examine the hypothesis concerning mean and proportion using z-test	K3	1	Lecture method	Black Board
35	CO4	Examine the hypothesis concerning two means and their differences	K3	2	Lecture method	Black Board
36	CO4	Examine the hypothesis concerning two proportions and their differences	K3	2	Lecture method	Black Board
		<b>UNIT-V Tests of Significance</b>		<b>12</b>		
37	CO5	Examine the hypothesis concerning small samples using t-test	K3	1	Lecture method	Black Board
38	CO5	Examine the hypothesis concerning small samples using t-test of two means	K3	2	Lecture method	Black Board
39	CO5	Examine the hypothesis concerning small samples using t-test of proportions	K3	2	Lecture method	Black Board
40	CO5	Examine the hypothesis concerning variance using F-test	K3	2	Lecture method	Black Board
41	CO5	Examine the hypothesis concerning variance using F-test	K3	1	Lecture method	Black Board
42	CO5	Examine the hypothesis	K3	2	Lecture	Black

		using chi-square test			method	Board
43	<b>CO5</b>	Examine the hypothesis using chi-square test of independent attributes	K3	2	Lecture method	Black Board

# Advanced Python Programming

Academic Year: 2023-24

Programme: B.Tech

Year/ Semester: III

Course : AIM

Name of the Course: Advanced Python Programming

Course Code: V20AIT02

## LESSON PLAN

**COURSE OUTCOMES (Along with Knowledge Level):**

**After completion of this course, the students will be able to:**

S.No.	CO No.	Course Outcome	BTL
1.	CO1	Demonstrate Regular Expressions and Database Connectivity.	K3
2.	CO2	Develop GUI interfaces using widgets.	K3
3.	CO3	Demonstrate statistical analysis using Numpy.	K3
4.	CO4	Demonstrate data analysis using pandas.	K3
5.	CO5	Develop different types of charts using matplotlib.	K3

### **TEXT BOOKS:**

1. Core Python Programming Dr. R Nageswara Rao Dreamtech publications.
2. Problem solving and python programming fundamentals and application: Numpy, Pandas and Matplotlib. HarshaBhasin.

### **Targeted Proficiency and Attainment Levels (for each course Outcome):**

Cos		CO1	CO2	CO3	CO4	CO5	CO6
Targeted Proficiency Level		70	70	70	70	70	70
Targeted level of Attainment	Level 3	70	70	70	70	70	70
	Level 2	60	60	60	60	60	60
	Level 1	50	50	50	50	50	50

**Lecture Plan:**

S#	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1	CO1	Dissemination of Course Outcomes		1	-	
		<b>Regular Expressions:</b> Explain Characters, Quantifiers & Special Characters.	K2	3	Lecture With Discussion	ICT
2		<b>Database Connectivity:</b> Describe advantages of a DBMS over files and Installation of MYSQL DB Software	K2	2	Lecture With Discussion	ICT
3		Demonstrate the use of MYSQL from Python to retrieve, insert, delete, and update operations on tables.	K3	3	Lecture With Discussion	ICT
4		Demonstrate the use of MYSQL from Python to delete, update operations on tables.	K3	3	Lecture With Discussion	ICT

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S.No	Course Outcome	Intended Learning Outcomes(ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO2	<b>Graphical User Interface:</b> Explain GUI in python & The root window, fonts and colors,	K2	2	Lecture with Discussion	ICT
2		Explain working with containers, canvas, frame, widgets & button widgets,	K2	2	Lecture with Discussion	ICT
3		Explain arranging widgets in the frame, label widget & message widget,	K2	2	Lecture with Discussion	ICT
4		Develop programs using text widget & scrollbar widget	K3	2	Lecture with Discussion	ICT
5		Develop programs using check button widget, & Radio button widget,	K3	2	Lecture with Discussion	ICT
6		Develop programs using entry widget & listbox widget.	K3	2	Lecture with Discussion	ICT

12

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO3	Explain working with arrays using Numpy :Introduction to Numpy,	K2	2	Lecture with Discussion	ICT
2		Explain functions for generating sequences , Aggregate functions ,	K2	2	Lecture with Discussion	ICT
3		Demonstrate generating random numbers using Numpy , zeros, ones, eyes and full	K3	2	Lecture with Discussion	ICT
4		Demonstrate indexing , slicing & scalar with an array operations	K3	2	Lecture with Discussion	ICT
5		Demonstrate array with an array operations & joining arrays	K3	2	Lecture with Discussion	ICT
6		Demonstrate splitting arrays, variance, covariance, correlation.	K3	2	Lecture with Discussion	ICT

12

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO4	<b>Data Analysis using Pandas:</b> Explain creating pandas series	K2	2	Lecture with Discussion	ICT
2		Explain indexing, iloc, slicing and boolean index , sorting	K2	2	Lecture with Discussion	ICT
3		statistical analysis , and string functions ,	K3	2	Lecture with Discussion	ICT
4		Demonstrate creation data frames , dealing with rows , iterating a pandas data frame	K3	2	Lecture with Discussion	ICT
5		Demonstrate data frame methods (head, tail and describe), sorting	K3	2	Lecture with Discussion	ICT
6		Demonstrate statistical analysis , and string functions ,	K3	2	Lecture with Discussion	ICT
7		Demonstrate reading of formatted files, handling missing values.	K3	2	Lecture with Discussion	ICT

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S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO5	<b>Data visualization:</b> Describe plot function	K2	2	Lecture with Discussion	ICT
2		Demonstrate plotting lines and curves, Additional Arguments	K3	2	Lecture with Discussion	ICT
3		Demonstrate the bar Chart ,box plot	K3	2	Lecture with Discussion	ICT
4		Demonstrate frequency plots and histogram , the pie chart.	K3	2	Lecture with Discussion	ICT

8

**Total No. of Classes: 58**



# Database Management Systems

Academic Year: 2023-24

Year/ Semester: III

Name of the Course: Database Management Systems

Programme: B.Tech

Section: AIM

Course Code: V20AIT03

## LESSON PLAN

**COURSE OUTCOMES (Along with Knowledge Level):**

**After completion of this course, the students will be able to:**

S. No	CO.No	Course Outcomes	BTL
1	CO1	Describe Database Architecture and Data Models.	K2
2	CO2	Demonstrate Relational algebra and Relational calculus.	K3
3	CO3	Apply Normalization Techniques to Refine Schema.	K3
4	CO4	Explain Transaction Management and Concurrency Control.	K2
5	CO5	Illustrate various database indexing techniques.	K2

### **Text Books:**

1. Database Management Systems, Raghu Ramakrishnan, Johannes Gehrke, 3rd Edition TATA McGraw Hill.
2. An Introduction to Database Systems, C.JDate, A.Kannan,S.JSwamynathan 8th Edition, Pearson Education.

### **Reference Books:**

1. Database Systems-Design, Implementation and Management, Peter Rob & Carlos Coronel 7th Edition, Course Technology Inc.
2. Fundamentals of Database Systems, Ramez Elmasri, Shamkant B. Navathe ,7th Edition,Pearson Education.
3. Database Systems - The Complete Book, Hector Garcia- Molina, Jeffry D Ullman, Jennifer Widom, 2nd Edition, Pearson.

Targeted Proficiency and attainment Levels (for each Course Outcome):

Cos		CO1	CO2	CO3	CO4	CO5
Targeted Proficiency Level		65	60	60	60	65
Targeted level of Attainment	Level 3	65	60	60	60	65
	Level 2	60	55	55	55	60
	Level 1	55	50	50	50	55

## Lecture Plan:

UNIT-I: An Overview of Database Systems and Database Design						
S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1		Dissemination of vision, mission, PEOs, POs, PSOs		1	Lecture	PPT
2	CO 1	Define Data, Database, Database Management System	K1	1	Lecture	PPT
3		Describe the disadvantages in Traditional File System and advantages of DBMS over file system	K1	1	Lecture with Discussion	PPT
4		Describe Data models	K2	1	Lecture	PPT
5		Discuss levels of abstraction in a DBMS		1	Lecture with Discussion	PPT
6		Describe data independence	K1	1	Lecture with Discussion	PPT
7		Illustrate the structure of DBMS	K2	1	Lecture with Discussion	PPT
8		Explain Client/Server Architecture	K2	1	Lecture with Discussion	PPT
9		Discuss E.F.Codd Rules		1	Lecture with Discussion	PPT
10		Describe introduction to Database Design: Database Design and ER Diagrams	K1	1	Lecture	PPT
11		Explain Entities, Attributes and Entity Sets	K2	1	Lecture With Discussion	PPT
12		Explain Relationships and Relationship Sets	K2	1	Lecture With Discussion	PPT
13			Illustrate Conceptual Design with the ER Model	K3	2	Lecture With Discussion
		<b>TOTAL</b>		<b>14</b>		

**UNIT-II: RELATIONAL MODEL, RELATIONAL ALGEBRA AND RELATIONAL CALCULUS**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 2	Explain The Relational Model: Integrity Constraints over Relations: Key Constraints, Foreign Key Constraints, General Constraints	K2	2	Lecture With Discussion	PPT
2		Demonstrate Enforcing Integrity Constraints	K2	1	Lecture With Discussion	PPT
3		Illustrate Querying relational data	K3	1	Lecture With Discussion	PPT
4		Illustrate Relational Algebra: Selection and Projection	K3	1	Lecture With Discussion	PPT
5		Illustrate Set Operations, Renaming, Joins, Division, More Example of Algebra Queries	K3	3	Lecture With Discussion	PPT
6		Describe views, tables	K2	1	Lecture With Discussion	PPT
7		Illustrate Destroying/altering tables and views	K3	1	Lecture With Discussion	PPT
8		Illustrate Relational Calculus : Tuple Relational Calculus	K3	1	Lecture With Discussion	PPT
9		Illustrate Domain Relational Calculus	K3	1	Lecture With Discussion	PPT
		<b>TOTAL</b>		<b>12</b>		

**UNIT-III: QUERIES, CONSTRAINTS, TRIGGERS AND SCHEMA  
REFINEMENT(NORMALIZATION)**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 3	Explain the Form of a Basic SQL Query	K2	1	Lecture with Demonstration	PPT
2		Illustrate Union,Intersect, Except and Nested Queries	K3	2	Lecture with Demonstration	PPT
3		Illustrate Aggregate Operators	K3	1	Lecture with Demonstration	PPT
4		Interpret Null Values	K2	1	Lecture with Demonstration	PPT
5		Illustrate Complex Integrity Constraints in SQL	K3	1	Lecture with Demonstration	PPT
6		Illustrate Triggers and Active Databases	K3	2	Lecture with Demonstration	PPT
7		Explain problems caused by Redundancy, Decomposition	K2	1	Lecture with Demonstration	PPT
8		Explain Purpose of Normalization or Schema Refinement	K2	1	Lecture With Discussion	PPT
9		Explain the Concept of Functional Dependency	K2	1	Lecture With Discussion	PPT
10		Illustrate Normal Forms Based on Functional Dependency (1NF, 2NF and 3 NF)	K3	2	Lecture With Discussion	PPT
11		Demonstrate Concept of Surrogate Key, Boyce-Codd Normal Form (BCNF)	K3	1	Lecture With Discussion	PPT
12		Illustrate Lossless Join and Dependency Preserving Decomposition, Fourth Normal Form (4NF)	K3	2	Lecture With Discussion	PPT
		<b>TOTAL</b>		<b>16</b>		

<b>UNIT-IV: TRANSACTION MANAGEMENT AND CONCURRENCY CONTROL</b>						
<b>S.No</b>	<b>Course Outcome</b>	<b>Intended Learning Outcomes (ILO)</b>	<b>Knowledge Level of ILO</b>	<b>No. of Hours</b>	<b>Pedagogy</b>	<b>Teaching aids</b>
1	CO 5	Describe Transaction, Properties of Transactions, Transaction Log	K2	1	Lecture With Discussion	PPT
2		Explain Transaction Management with SQL Using Commit, Rollback and Save point.	K2	2	Lecture With Discussion	PPT
3		Describe Concurrency Control for Lost Updates, Uncommitted Data, Inconsistent Retrievals and The Scheduler	K2	2	Lecture With Discussion	PPT
4		Explain Concurrency Control with Locking Methods: Lock Granularity, Lock Types, Two Phase Locking for Ensuring Serializability	K2	3	Lecture With Discussion & Seminar	PPT
5		Explain Deadlocks, Concurrency Control with Time Stamp Ordering	K2	2	Lecture With Discussion	PPT
7		Describe Database Recovery Management: Transaction Recovery	K2	1	Lecture With Discussion	PPT
			<b>TOTAL</b>		<b>11</b>	

<b>UNIT-V: STORAGE AND INDEXING</b>						
<b>S.No</b>	<b>Course Outcome</b>	<b>Intended Learning Outcomes (ILO)</b>	<b>Knowledge Level of ILO</b>	<b>No. of Hours</b>	<b>Pedagogy</b>	<b>Teaching aids</b>
1		Describe Overview of Storages and Indexing	K1	1	Lecture With Discussion	PPT
2	CO 6	Describe data on External Storage	K1	1	Lecture With Discussion	PPT
3		Explain File Organizations and Indexing: Clustered Indexes, Primary and Secondary Indexes	K2	2	Lecture With Discussion	PPT
4		Explain Index Data Structures: Hash-Based Indexing, Tree-Based Indexing	K2	2	Lecture With Discussion	PPT
5		Explain Comparison of File Organizations	K2	2	Lecture With Discussion	PPT
		<b>TOTAL</b>		<b>8</b>		

**TOTAL HOURS:61**

# Advanced Python Programming Lab

Academic Year: 2023-24

Programme: B.Tech

Year/ Semester: III

Section : AIM

Name of the Course: Advanced Python Programming Lab Course Code: V20AIL03

## LESSON PLAN

**COURSE OUTCOMES (Along with Knowledge Level):**

After completion of this course, the students will be able to:

S.No.	CO No.	Course Outcome	BTL
1.	CO1	Develop Python Programs using regular expressions and Database.	K3
2.	CO2	Develop programs using GUI.	K3
3.	CO3	Construct programs using Numpy Arrays.	K3
4.	CO4	Develop python programs using pandas.	K3
5.	CO5	Develop charts using matplotlib.	K3

## **TEXT BOOKS:**

1. Core Python Programming Dr. R Nageswara Rao Dreamtech publications.
2. Problem solving and python programming fundamentals and application: Numpy, Pandas and Matplotlib. HarshaBhasin.

## **Targeted Proficiency and Attainment Levels (for each course Outcome):**

Cos		CO1	CO2	CO3	CO4	CO5	CO6
Targeted Proficiency Level		70	70	70	70	70	70
Targeted level of Attainment	Level 3	70	70	70	70	70	70
	Level 2	60	60	60	60	60	60
	Level 1	50	50	50	50	50	50

**Lecture Plan:**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 1	Dissemination of COs	-	1	Lecture With Discussion	ICT
		<b>1. Regular expressions &amp; Database:</b> a) Develop a python program to create regular expression to replace a string with a new string. b) Develop a python program to create regular expression to retrieve all the words starting with 'a' in a given string and other create other regular expression to retrieve all the words with size 5.	K3	2	LectureWith Discussion	ICT
		c) Develop a Python Program to create a regular expression to search for string using search() , findall() , match(). d) Create a python program to connect MYSQL database and perform operations viz. create,alter	K3	3	LectureWith Discussion	ICT
2		a) Create a python program to connect MYSQL database and perform operations viz. retrieve, insert, delete and update.	K3	6	LectureWith Discussion	ICT



S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 2	<b>GUI:</b> a) Develop a Python Program to draw different shapes on canvas. b) Develop a Python Program to create a push button and bind it with an event handler function using command option.	K3	3	LectureWith Discussion	ICT
2		c) Develop a Python Program to design a simple calculator. d) Develop a Python Program to create check boxes and display the content of selected boxes. e) Develop a Python Program using GUI to retrieve a row from a MYSQL database table.	K3	6	LectureWith Discussion	ICT

.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 3	a. Develop a Python Program to split arrays using numpy module. b. Develop a Python Program to test all aggregate functions in numpy module c. Develop a Python Program to generate a matrix of random numbers within range and print its Transpose. d. Develop a Python Program that calculates variance, co variance, correlation by taking a sample statistical data.	K3	3	Lecture with Discussion	ICT
2		e. Develop a python program to find rank, determinant, and trace of	K3	6	Lecture with Discussion	ICT

		<p>an array.</p> <p>f. Develop a python program to find eigenvalues of matrices.</p> <p>g. Develop a python program to find matrix and vector products (dot, inner, outer, product), matrix exponentiation.</p> <p>h. Develop a python program to solve a linear matrix equation, or system of linear scalar equations.</p>				
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S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 4	<p><b>3. Pandas</b>Develop a python program to implement Pandas Series with labels, dictionary and Numpy.</p> <p>a. Develop a program to creating a Pandas DataFrame using dictionary and two dimensional array.</p> <p>b. Develop a program which make use of following Pandas methods i) describe() ii) head() iii) tail()</p>	K3	3	Lecture with Discussion	ICT
2		<p>c. Develop a python program to perform insert, delete row operations on data frame.</p> <p>d. Develop a python program of groupby() method.</p> <p>e. Demonstrate pandas Merging, Joining and Concatenating.</p> <p>f. Creating data frames from csv and excel files.</p>	K3	6	Lecture with Discussion	ICT

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 5	<b>4. Matplotlib Library: Visualization</b>  a. Develop a program which use pandas inbuilt visualization to plot following graphs: i. Bar plots ii. Histograms iii. Bar plots	K3	3	Lecture with Discussion	ICT
2		b. Develop a program which use pandas inbuilt visualization to plot following graphs: iv. Histograms v. Line plots vi. Scatter plots	K3	3	Lecture with Discussion	ICT

**Total No. of Classes: 45**

# Database Management System Lab

Academic Year: 2023-24

Year/ Semester: III

Name of the Course: Database Management System Lab

Programme: B.Tech

Section: AIM

CourseCode: V20AIL05

## LESSON PLAN

**COURSE OUTCOMES (Along with Knowledge Level):**

**After completion of this course, the students will be able to:**

S.No.	CO No.	Course Outcome	BTL
1.	CO1	Construct SQL Queries to perform different database operations	K3
2.	CO2	Experiment with various Constraints and Database Indexing Techniques.	K3
3.	CO3	Experiment with Transaction management to control the data	K3
4.	CO4	Construct PL/SQL Cursors and Exceptions	K3
5.	CO5	Develop PL/SQL Functions, Procedures, Packages	K3

Text Books:

1. Oracle Database 11g the Complete Reference by Oracle Press, Kevin Loney
2. Database Systems Using Oracle, Nilesh Shah, 2nd Edition ,PHI.
3. Introduction to SQL, Rick F Vander Lans, 4th Edition, Pearson Education.

Reference Books:

1. Oracle PL/SQL Interactive Workbook, B. Rosenzweig and E. Silvestrova,2nd Edition, Pearson education.
2. SQL & PL/SQL for Oracle 10 g, Black Book, Dr. P. S. Deshpande, Dream Tech.

**Targeted Proficiency and attainment Levels (for each Course Outcome):**

Cos		CO1	CO2	CO3	CO4	CO5
Targeted Proficiency Level		65	65	65	65	60
Targeted level of Attainment	Level 3	65	65	65	60	60
	Level 2	55	55	55	50	50
	Level 1	45	45	45	40	40

**CO1:**

<b>S.No</b>	<b>Course Outcome</b>	<b>Intended Learning Outcomes (ILO)</b>	<b>Knowledge Level of ILO</b>	<b>No. of Hours</b>	<b>Pedagogy</b>	<b>Teaching aids</b>
1	CO1	Exp1: Develop a Query to facilitate acquaintance of Built-In Functions, String Functions, Numeric Functions, Date Functions and Conversion Functions.	<b>K3</b>	15	Demonstration & Experiment	PPT
2		Exp2: Develop queries using operators in SQL				
3		Exp3: Develop different queries to Retrieve and Change Data using Select, Insert, Delete, and Update				
4		Exp4: Develop different queries using Group By, Order By, and Having Clauses				
5		Exp8: Develop queries on joins and Corelated Subqueries				

**CO2:**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
7 8	CO2	Exp7: Develop queries for Creating, Dropping, and Altering Tables, Views, and Constraints  Exp 9: Develop different queries on Working with Index, Sequence, Synonym.  Exp 10:Controlling Access, and Locking Rows for Update, Creating Password and Security features PL/SQL.	<b>K3</b>	6	Lecture & Experiment	PPT

**CO3:**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
10	CO3	Exp5: Develop queries on Controlling Data(Commit, Rollback, and Save point)  Exp6: Develop a Query to Build Report in SQL *PLUS	<b>K3</b>	6	Lecture & Experiment	PPT

**CO4:**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
11	CO4	Exp11: Develop PL/SQL Code using Basic Variable, Anchored Declarations, and Usage of Assignment Operation.	<b>K3</b>	6	Demonstration & Experiment	PPT
12		Exp12: Develop PL/SQL Code for Bind and Substitution Variables and Printing in PL/SQL				
13		Exp13: Develop PL/SQL block using SQL and Control Structures in PL/SQL				
14		Exp 14: Develop PL/SQL Code using Cursors, Exceptions and Composite Data Types				

**CO5:**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
15	CO5	Exp 15: Develop PL/SQL Code using Procedures, Functions, Packages and Forms	<b>K3</b>	3	Demonstration & Experiment	PPT

**Total no of hours: 36**

# Linux Shell Scripting Lab

Academic Year: 2023-24

Year/ Semester: III

Name of the Course: Linux Shell Scripting Lab

Programme: B.Tech

Section: AIM

CourseCode: V20AIL04

## LESSON PLAN

**COURSE OUTCOMES (Along with Knowledge Level):**

**After completion of this course, the students will be able to:**

S. No	CO. No	Course Outcomes	BTL
1	CO1	Demonstrate the basic knowledge of Linux commands and utilities by using Linux shell environment	<b>K3</b>
2	CO2	Experiment with the Concept of shell Programming on Files and Directories	<b>K3</b>
3	CO3	Experiment with the Concept of shell Programming on File Permissions	<b>K3</b>
4	CO4	Experiment with the Concept of shell Programming on Conditional Statements	<b>K3</b>
5	CO5	Experiment with the Concept of shell Programming on Looping Statements	<b>K3</b>

**Targeted Proficiency and Attainment Levels (for each Course Outcome):**

COs		CO1	CO2	CO3	CO4	CO5
Targeted Proficiency Level		75	75	75	75	75
Targeted level of Attainment	Level 3	70	70	70	70	70
	Level 2	65	65	65	65	65
	Level 1	55	55	55	55	55



**Lecture Plan:**

S. No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 1	Dissemination of Department Vision, Mission, PEOs, POs, PSOs	-	1	Lecture With Discussion	ICT
		Demonstrate Linux Commands overview and how to interact with Putty Server.	K3	2	Lecture With Discussion	ICT
2		Experiment basics of Linux Commands.	K3	3	Lecture With Discussion	ICT
3		Experiment General Purpose Utilities.	K3	3	Lecture With Discussion	ICT
4		Experiment Displaying Commands.	K3	3	Lecture With Discussion	ICT
5		Experiment Commands on Filters.	K3	3	Lecture With Discussion	ICT
6		Experiment Disk Handling Utilities.	K3	3	Lecture With Discussion	ICT

S. No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 2	Experiment Directory Handling Commands.	K3	3	Lecture With Discussion	ICT
2		Experiment File Handling Utilities.	K3	3	Lecture With Discussion	ICT
3		Develop a shell script to print the list of all sub directories in the current directory.	K3	3	Lecture with Discussion	ICT

S. No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 3	Develop a shell script that Changes Permissions of files in PWD as rwx for users.	K3	3	Lecture with Discussion	ICT

S. No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 4	Develop a Shell Program which receives any year from the keyboard and determine whether the year is leap year or not. If no argument is supplied the current year should be assumed.	K3	3	Lecture with Discussion	ICT
2		Develop a shell script which takes two file names as arguments-If their contents are same then delete the second file.	K3	3	Lecture with Discussion	ICT

S. No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 5	Develop a shell program to a) Display all the words which are entered as command line arguments. b) Print the given number in the reversed order.	K3	3	Lecture with Discussion	ICT
2		Develop a shell script to delete all lines containing the word 'unix' in the files supplied as arguments.	K3	3	Lecture with Discussion	ICT
3		Develop a shell script to print a) First 25 Fibonacci numbers b) The Prime numbers between the specified range.	K3	3	Lecture with Discussion	ICT
4		Develop a shell script Menu driven i) contents of /etc/passwd ii) list of users who have currently logged in. iii) present working directory. iv) exit.	K3	3	Lecture with Discussion	ICT

**Total No. of Classes: 48**

# Professional Communication Skills - I

Academic Year: 2023-24

Year/ Semester: III

Name of the Course: Professional Communication Skills - I

Programme: B.Tech

Section: AIM

CourseCode:V20ENT02

## LESSON PLAN

**COURSE OUTCOMES (Along with Knowledge Level):**

After completion of this course, the students will be able to:

S. No.	CO No.	Course Outcome	BTL
1.	CO1	Use vocabulary in regular chores of life with accuracy, make meaningful sentences, and describe people and their traits vividly.	K3
2.	CO2	Distinguish between places of pilgrimage and holiday spots; describe incidents, things and process; and frame questions, statements and expressions.	K3
3.	CO3	Demonstrate their knowledge of idioms which are similar to those of native speakers while speaking and writing and use phrases clearly and precisely to articulate their views that compare and contrast indianisms with native expressions and avoid common errors.	K3
4.	CO4	Employ the vocabulary of netizens with ease and walk through the letters and emails for effective official correspondence and infer the accurate meaning of the homophones that are often confusing	K3
5.	CO5	Summarize their profile; introduce themselves as well as others by incorporating their accomplishments and Sketch stories and anecdotes in an interesting and engaging manner that arouses curiosity of the audience.	

**Targeted Proficiency Level and Targeted level of Attainment (for each Course Outcome):**

Course Outcome	Targeted Proficiency Level (% of Marks)	Targeted level of Attainment (% Students)
1	50	60
2	50	60
3	50	60
4	50	60
5	50	60

**CO 1**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 1	Find appropriate vocabulary to describe occupations, kitchen utensils and tools . <b>Ice-breaking session</b>	K3	1	Lecture& Discussion	BB/Handout
2		Find appropriate vocabulary to describe spices, vegetables, flowers, sciences of study and professions	K3	1	Lecture& Discussion	BB/Handout
3		Find appropriate vocabulary to describe spices, vegetables, flowers, sciences of study and professions	K3	1	Lecture & Discussion	BB/ Handout
4		Tool-based Activity		1		
5		Construct questions , frame statements and use expressions related to vocabulary learnt <b>Activity</b>	K3	1	Lecture & Discussion	BB/ Handout.
6		Select suitable words and expressions to describe people and physical characteristics	K3	1	Lecture & Discussion	BB/ Handout.
7		Select suitable words and expressions to talk about mental attributes of people and various professions	K3	1	Lecture & Discussion	BB/ Handout.
8		Select suitable words and expressions to talk about mental attributes of people and various professions	K3	1	Lecture & Discussion	BB/ Handout.
9		Construct questions, frame statements and use expressions related to vocabulary learnt. <b>Activity</b>	K3	1	Lecture & Discussion	BB/ Handout
10		Tool-based Activity		1		

**CO 2**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 2	Describe favorite places and famous places using appropriate vocabulary	K2	1	Lecture & Discussion	BB/Handout
2		Describe places of pilgrimage and holiday spots	K2	1	Lecture & Discussion	BB/Handout
3		Describe places of pilgrimage and holiday spots. <b>Activity</b>	K2	1	Lecture & Discussion	BB/Handout
4		Tool-based Activity		1		
5		Use suitable expressions to describe a thing and an incident	K3	1	Lecture & Discussion	BB/Handout.
6		Use suitable expressions to describe a thing and an event	K3	1	Lecture & Discussion	BB/Handout.
7		Distinguish between the vocabulary and expressions used to describe a process and a recipe.	K3	1	Lecture & Discussion	BB/Handout.
8		Distinguish between the vocabulary and expressions used to describe a process and a recipe.	K3	1	Lecture & Discussion	BB/Handout.
9		Construct questions, frame statements and use expressions related to vocabulary learnt. <b>Activity</b>	K3	1	Lecture & Discussion	BB/Handout
10		Tool-based Activity		1		

**CO 3**

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 3	Use idioms and phrases in day to day conversation both in written and spoken	K3	1	Lecture & Discussion	BB/Handout
2		Use idioms and phrases in day to day conversation both in written and spoken	K3	1	Lecture & Discussion	BB/Handout
3		Compare and contrast using “as...as” expressions. <b>Activity</b>	K4	1	Lecture & Discussion	BB/Handout
4		Tool-based Activity		1		
5		Examine common mistakes in written and spoken.	K4	1	Lecture & Discussion	BB/Handout.

6		Examine common mistakes in written and spoken.	K4	1	Lecture & Discussion	BB/ Handout.
7		Activity on common errors		1	Lecture & Discussion	BB/ Handout.
8		Compare and contrast Indianisms with native expressions	K4	1	Lecture & Discussion	BB/ Handout.
9		Compare and contrast Indianisms with native expressions	K4	1	Lecture & Discussion	BB/ Handout
10		Tool-based Activity		1		

#### CO 4

S.No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 4	Find the vocabulary of netizens	K3	1	Lecture & Discussion	BB/Handout
2		Use Acronyms and abbreviations that are often used by netizens.	K3	1	Lecture & Discussion	BB/Handout
3		Infer the meaning of the homophones that are often confusing.	K4	1	Lecture & Discussion	BB/ Handout
4		Activity related to Homophones		1		
5		Tool-based Activity		1	Lecture & Discussion	BB/ Handout.
6		Use the correct format for writing both formal and informal letters	K3	1	Lecture & Discussion	BB/ Handout.
7		Organise ideas and draft emails (Business mail)	K3	1	Lecture & Discussion	BB/ Handout.
8		Organise ideas and draft emails (Project status mails, informative mails)	K3	1	Lecture & Discussion	BB/ Handout.
9		<b>Activity</b> (writing practice)		1	Lecture & Discussion	BB/ Handout
10		Tool-based Activity		1		

**CO 5**

<b>S. No</b>	<b>Course Outcome</b>	<b>Intended Learning Outcomes (ILO)</b>	<b>Knowledge Level of ILO</b>	<b>No. of Hours</b>	<b>Pedagogy</b>	<b>Teaching aids</b>
1	CO 5	Summarize the strengths, weaknesses and goals	K5	1	Lecture & Discussion	BB/Handout
2		Summarize personal and academic achievements	K5	1	Lecture & Discussion	BB/Handout
3		<b>Activity</b> (Face to face Interviews)		1	Lecture & Discussion	BB/Handout
4		Tool-based Activity		1		
5		Develop Resume	K3	1	Lecture & Discussion	BB/Handout.
6		Develop Resume(Practice)	K3	1	Lecture & Discussion	BB/Handout.
7		Sketch stories and anecdotes in an interesting and engaging manner	K3	1	Lecture & Discussion	BB/Handout.
8		Sketch stories and anecdotes in an interesting and engaging manner	K3	1	Lecture & Discussion	BB/Handout.
9		<b>Activity</b> (Story narration)	K3	1	Lecture & Discussion	BB/Handout
10		Tool-based Activity		1		

**Total No. of Classes: 50**