SRI VASAVI ENGINEERING COLLEGE (Autonomous)

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

A.Y: 2023-24

V SEM CSE Handbook

## Department of Computer Science and Engineering (Accredited by NBA)

Pedatadepalli, Tadepalligudem-534101, A.P

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INSTITUTE
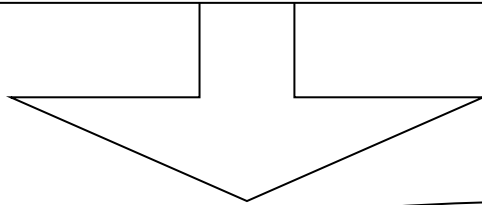
VISION MISSION

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..

DEPARTMENT

VISION MISSION

Vision:

- To evolve as a centre of academic and research excellence in the area of Computer Science and Engineering.

Mission :

➢ To utilize innovative learning methods for academic improvement.

➢ To encourage higher studies and research to meet the futuristic requirements of Computer Science and Engineering.

➢ To inculcate Ethics and Human values for developing students with good character

PROGRAM EDUCATIONAL OBJECTIVES, PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES

Program Educational Objectives (PEOs)

Graduates of this programme will :

PEO 1: Adapt to evolving technology.

PEO 2: Provide optimal solutions to real time problems.

PEO 3: Demonstrate his/her abilities to support service activities with due consideration for Professional and Ethical Values.

Programme Specific Outcomes (PSO s):

A graduate of the Computer Science and Engineering Program will be able to:

PSO 1: Use Mathematical Abstractions and Algorithmic Design along with Open Source Programming tools to solve complexities involved in Programming. [K3]

PSO 2: Use Professional engineering practices and strategies for development and maintenance of software. [K3]

Program Outcomes (POs):

Computer Science Engineering Graduates will be able to:

1. **Engineering knowledge**: Apply the knowledge of Mathematics, Science, Engineering Fundamentals and Concepts of Computer Science Engineering to the solution of complex Engineering problems. **[K3]**

2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of Mathematics, Natural Sciences and Computer Science. **[K4]**

3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specific needs with appropriate consideration for the public health and safety, and the cultural, societal and environmental considerations. **[K5]**

4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. **[K5]**

5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex Engineering activities with an understanding of the limitations**. **[K3]**

6. **The Engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional Engineering practice. **[K3]**

7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. **[K3]**

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the Engineering practice. **[K3]**

9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.   **[K6]**

10. **Communication**: Communicate effectively on complex Engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.   **[K2]**

11. **Project management and finance**: Demonstrate knowledge and understanding of the Engineering and Management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.   **[K6]**

12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.   **[K1]**

ACADEMIC CALENDAR

Principal's Office
Date: 15-07-2023

Academic Calendar
For III B.Tech (V and VI Semesters), Academic Year 2023-24

V Semester			
Description	From	To	Weeks
Commencement of Class Work	31.07.2023		
I Unit of Instructions	31.07.2023	23.09.2023	8 W
I Mid Examinations	25.09.2023	30.09.2023	1 W
II Unit of Instructions	03.10.2023	25.11.2023	8 W
II Mid Examinations	27.11.2023	02.12.2023	1 W
Preparation & Practicals	04.12.2023	09.12.2023	1 W
End Examinations	11.12.2023	23.12.2023	2 W
Commencement of Next Semester Class Work (VI Semester)	26.12.2023		
VI Semester			
I Unit of Instructions	26.12.2023	17.02.2024	8 W
I Mid Examinations	19.02.2024	24.02.2024	1 W
II Unit of Instructions	26.02.2024	20.04.2024	8 W
II Mid Examinations	22.04.2024	27.04.2024	1 W
Preparation & Practicals	29.04.2024	04.05.2024	1 W
End Examinations	06.05.2024	18.05.2024	2 W

PRINCIPAL

Copy to : ALL

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.

SRI VASAVI ENGINEERING COLLEGE (Autonomous)

Pedatadepalli, TADEPALLIGUDEM-534 101, W.G. Dist.
Department Of Computer Science &Engineering (Accredited by NBA)

CLASS CONSOLIDATED TIME TABLE

Class: V Semester   w.e.f. 31-07-2023

Section: A   **Class Coordinator: Mr. M. Yesu Sekharam**   **Room No:** G-203

Periods	1	2	3	4	1:00PM 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-1.00 PM)		(02.00 PM-02.50 PM)	(02.50 M-03.40 PM)	(03.40 PM-04.30 PM)
Mon	DM	WT	APTITUDE		Lunch Break	MCCP-I		
Tue	WT	DM LAB				DM	OS	AI
Wed	AI	DM	OS	LIBRARY		AI	WT	SPORTS
Thu	WT	WT LAB				OS	DM	
Fri	AI	WT	OS	WT		AI	DM	OS
Sat	OS	MCCP-I				APTITUDE(V)		AI

Section: B   **Class Coordinator: Mr. G N V Ratnakishore**   **Room No:** G-204

Periods	1	2	3	4	1:00PM 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 M-03.40 PM)	(03.40 PM-04.30 PM)
Mon	OS	AI	WT	DM	Lunch Break	WT	APTITUDE	
Tue	AI	MCCP-I				OS	DM	SPORTS
Wed	WT	OS	AI	DM		DM LAB		
Thu	DM	DM	AI	OS		AI	WT	OS
Fri	OS	MCCP-I				APTITUDE(V)		WT
Sat	DM	AI	WT	LIBRARY		WT LAB		

Section: C   **Class Coordinator: Mrs. N. Hiranmayee**   **Room No:** G-301

Periods	1	2	3	4	1:00PM 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)
Mon	OS	WT	DM	AI	Lunch Break	WT LAB		
Tue	WT	MCCP-I				DM	APTITUDE	
Wed	AI	OS	APTITUDE(V)			AI	WT	LIBRARY
Thu	DM	WT	OS	AI		DM LAB		
Fri	OS	MCCP-I				OS	DM	AI
Sat	DM	AI	DM	OS		WT		SPORTS

Section: D   **Class Coordinator: Miss. G. Nagavallika**   **Room No:** G-302

Periods	1	2	3	4	1:00PM 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)
Mon	AI	DM	OS	OS	Lunch Break	MCCP-I		
Tue	AI	OS	APTITUDE			WT	WT	DM
Wed	DM	DM LAB				WT	OS	AI
Thu	DM	APTITUDE(V)		WT		OS	AI	LIBRARY
Fri	WT	WT LAB				AI	OS	SPORTS
Sat	WT	MCCP-I				DM		AI

Staff Details:

Sl. No.	Course Code	Course Name	Section			
			A	B	C	D
1.	V20CST10	Operating Systems (OS)	Mr. M. Yesu Sekharam	Mr. M. Yesu Sekharam	Mrs. N. Hiranmayee	Mrs. N. Hiranmayee
2.	V20CST11	Data Mining (DM)	Mr. N.V. Ratnakishore Gade	Mr. N.V. Ratnakishore Gade	Dr. V.S.Naresh	Mr. E VimalRaj
3.	V20CST12	Web Technologies (WT)	Mr. R L Phani Kumar	Mr. R L Phani Kumar	Mr. K. Praveen Kumar	Mr. K. Praveen Kumar
4.	V20CSTJE01	**Job Oriented Elective-I:** Master Coding in Competitive Programming(MCCP-I)	Dr. V Venkateswara Rao / Ms. D Sasi Rekha	Dr. V Venkateswara Rao/ Mr. P Rishikesh	Dr. V Venkateswara Rao/ Mr. P Rishikesh	Dr. V Venkateswara Rao / Ms. D Sasi Rekha
5.	V20CSTPE03	**Elective-I** : Artificial Intelligence (AI)	Dr.G. Loshma	Dr.G. Loshma	Ms. G. Nagavallika	Ms. G. Nagavallika
6.	V20CSL09	Data Mining Lab (DM Lab)	Mr. N.V. Ratnakishore Gade / Mr. P Rammohan Rao	Mr. N.V. Ratnakishore Gade / Dr. K Srinivasa Rao	Dr. V.S.Naresh / Mr.M V V Gopala Krishna Murthy	Mr. E VimalRaj / Mr. N V M K Raja
7.	V20CSL10	Web Technologies Lab (WT Lab)	Mr. R.L.Phani Kumar / Mr. M V V Krishna	Mr. R.L.Phani Kumar / Mr. P Kalyan Babu	Mr. K. Praveen Kumar / Mrs. G Prashanthi	Mr. K. Praveen Kumar / Mrs. B Sri Ramya
8.	V20ENT03	Professional Communication Skills-III (PCS-III)	Mr.G.Srinivasa Rao**(Verbal)** / Mr.T.H.S.Srinivas **(Aptitude)**	Mrs.U.Aparanjani **(Verbal)/** Mr.J.N.V.Somayajulu **(Aptitude)**	Mrs.Ch.Tanuja **(Verbal)/** Mr.J.N.V.Somayajulu **(Aptitude)**	Mr.K.V.Rama Rao**(Verbal)/** Mr.T.H.S. Srinivas **(Aptitude)**

Lab Venues:

S.No.	Name of the Lab Course	Lab Venue
1	Data Mining Lab	Linus Torvalds Lab (CRC-I First Floor)
2	Web Technologies Lab	
3	**Job Oriented Elective-I:** Master Coding in Competitive Programming(MCCP-I)	Yellow Seminar Hall (G-Block Ground Floor)

Head of the Department

COURSE STRUCTURE

V - SEMESTER

S. No.	Course Code	Name of the Course		L	T	P	C
1	V20CST10	Operating Systems	PCC	3	0	0	3
2	V20CST11	Data Mining	PCC	3	0	0	3
3	V20CST12	Web Technologies	PCC	3	0	0	3
4	V20CSTJE01	**Job Oriented Elective-I:** Master Coding in Competitive Programming(MCCP-I)	JOE	0	0	6	3
5	**Professional Elective-I**		PEC	3	0	0	3
	V20CSTPE01	Software Testing Methodologies					
	V20CSTPE02	Principles of Programming Languages					
	V20CSTPE03	Artificial Intelligence					
	V20CSTPE04	Computer Graphics					
6	V20CSL09	Data Mining Lab	PCC	0	0	3	1.5
7	V20CSL10	Web Technologies Lab	PCC	0	0	3	1.5
8	V20SOC03	Skill Oriented Course-III (Soft Skills)	SOC/SS	1	0	2	2
9	V20CSP01	Mini Project / Internship	Internship	0	0	3	1.5
10	V20ENT04	Professional Communication Skills -III	MNC	2	0	0	0
			Total	**15**	**0**	**17**	**21.5**

Total Contact Hours: 32   Total Credits: 21.5

LESSON PLANS

Operating Systems

Academic Year : 2023-24   **Programme**: B.Tech
Semester : **V**   **Sections** :A,B,C & D
Name of the Course: **Operating Systems**   **Course Code**: **V20CST10**

COURSE OUTCOMES (Along with Knowledge Level):

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

S.No.	Co No.	Course Outcome	Knowledge Level
1.	CO1	Describe Operating System Services and System Calls	K2
2.	CO2	Illustrate Process Management Concepts and CPU Scheduling Algorithms	K3
3.	CO3	Demonstrate Process Synchronization primitives and Process Deadlocks	K3
4.	CO4	Illustrate Memory Management Techniques and Page Replacement Algorithms	K3
5.	CO5	Describe File System Concepts and Mass Storage Structures	K2

Text Books:

1. Operating System Concepts, Abraham Silberschatz, ,Peter Baer Galvin, Greg Gagne, 9th Edition, John Wiley and Sons Inc., 2012

Reference Books:

1. Operating Systems – Internals and Design Principles, William Stallings, 7th Edition, Prentice Hall, 2012
2. Modern Operating Systems, Andrew S. Tanenbaum, Third Edition, Addison Wesley,2007

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	55	50	50	50	55
	Level 1	45	40	40	40	45

Lecture Plan:

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1		Dissemination of Department Vision, Mission, PEOs, POs, PSOs	-	1	-	
		Introduction of OS	K2	2	Lecture with Discussion	BB/ICT
2		Operating-System Structure	K2	2	Lecture with Discussion	BB/ICT
3	CO 1	Operating-System Services	K2	1	Lecture with Discussion	BB/ICT
4		User and Operating-System Interface	K2	1	Lecture with Discussion	BB/ICT
5		System Calls	K2	1	Lecture with Discussion	BB/ICT
6		Types of System Calls	K2	1	Lecture with Discussion and in class assignment	BB/ICT
				9		

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1		Process Concept and Process Scheduling	K3	2	Lecture with Discussion	BB/ICT
2		Operations On Processes	K3	1	Lecture with Discussion	BB/ICT
3		Inter Process Communication	K3	1	Lecture with Discussion	BB/ICT
4	CO2	Threads overview	K3	1	Lecture with Discussion	BB/ICT
5		Multithreading Models	K3	1	Lecture with Discussion	BB/ICT
6		CPU Scheduling Basic Concepts and CPU Scheduling Criteria	K3	2	Lecture with Discussion	BB/ICT
7		CPU Scheduling Algorithms	K3	3	Lecture with Discussion and in class Assignment	BB/ICT
				11		

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1	CO3	Critical Section Problem	K3	1	Lecture with Discussion	BB/ICT
2		Peterson's Solution	K3	1	Lecture with Discussion	BB/ICT
3		Synchronization Hardware	K3	1	Lecture with Discussion	BB/ICT
4		Mutex Locks	K3	1	Lecture with Discussion	BB/ICT
5		Semaphores	K3	2	Lecture with Discussion and in class Assignment	BB/ICT
6		Classic Problems of Synchronization	K3	2	Lecture with Discussion and in class Assignment	BB/ICT
7		Monitors	K3	1	Lecture with Discussion	BB/ICT
8		System Model and DeadLock Characterization	K3	1	Lecture with Discussion	BB/ICT
9		Methods for Handling Deadlocks	K3	2	Lecture with Discussion	BB/ICT
10		Deadlock Prevention	K3	1	Lecture with Discussion	BB/ICT
11		Deadlock Avoidance	K3	2	Lecture with Discussion and in class Assignment	BB/ICT
12		Deadlock Detection	K3	1	Lecture with Discussion	BB/ICT
13		Recovery from Deadlock	K3	2	Lecture with Discussion	BB/ICT
				18		

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1		Swapping and Contiguous Memory Allocation	K3	2	Lecture with Discussion	BB/ICT
2		Segmentation	K3	1	Lecture with Discussion	BB/ICT
3		Paging	K3	2	Lecture with Discussion and in class Assignment	BB/ICT
4	CO4	Structure of the Page Table	K3	1	Lecture with Discussion	BB/ICT
5		Demand Paging	K3	1	Lecture with Discussion	BB/ICT
6		Page Replacement Algorithms	K3	2	Lecture with Discussion and in class Assignment	BB/ICT
7		Allocation of Frames	K3	2	Lecture with Discussion	BB/ICT
8		Thrashing	K3	1	Lecture with Discussion	BB/ICT
				12		

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1	CO5	Overview of Mass-Storage Structure	K2	1	Lecture with Discussion	BB/ICT
2		Disk Scheduling	K2	2	Lecture with Discussion and in class assignment	BB/ICT
3		File Concept, Access Methods	K2	2	Lecture with Discussion	BB/ICT
4		Directory and Disk Structure	K2	2	Lecture with Discussion	BB/ICT
5		File-System Mounting	K2	2	Lecture with Discussion	BB/ICT
6		File Allocation Methods	K2	1	Lecture with Discussion	BB/ICT
				10		

Total No Of Hours:**60**

Data Mining

Academic Year   : 2023-24   **Programme: B.Tech**
Year/ Semester   : V Sem   **Section:A, B, C, D**
Name of the Course: Data Mining   **Course Code: V20CST11**

Course Outcomes (Along with Knowledge Level):

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

S.No.	CO No.	Course Outcome
1	CO1	Explain the concept of Data Mining and its functionalities.[K2]
2	CO2	Discuss various Data Preprocessing Techniques [K2]
3	CO3	Demonstrate Association Analysis Techniques. [K3]
4	CO4	Illustrate various Classification Techniques.[K3]
5	CO5	Demonstrate Alternative techniques for Classification [K3]

Text Books:
1. Data Mining Concepts and Techniques, Jiawei Han, MichelineKamber, Jian Pei,3rdEdition, Morgan Kaufmann Publishers

Reference Books:
1. Introduction to Data Mining, Pang-Ning Tan, Michael Steinbach, Vipin Kumar, 1st Edition, Pearson Education Inc.
2. Data Mining and Analysis,Mohammed J Zaki, Wagner Meira JR, 1st Edition ,Cambridge University Press

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	65	65	60	60	60
	Level 2	55	55	50	50	50
	Level 1	45	45	40	40	40

Lecture Plan

UNIT - I

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1.		Dissemination of Department Vision, Mission, PEOs, POs, PSOs, COs, **Introduction**: Identify what motivated Data Mining.	K1	1	Lecture	BB/ICT
2.		State the importance of Data Mining. Describe kinds of Data on which Data Mining can be done.	K1	2	Lecture	BB/ICT
3.	**CO1**	Illustrate Data Mining Functionalities.	K2	2	Lecture+ discussion	BB/ICT
4.		Illustrate Major Issues in Data Mining	K1	1	Lecture	BB/ICT
5.		Explain Attribute Types and Basic Statistical Descriptions of Data	K2	2	Lecture + discussion	BB/ICT
6.		Illustrate Data Visualization techniques.	K2	1	Lecture + discussion	BB/ICT
7.		Describe Data Similarity and Dissimilarity measures	K2	2	Lecture + discussion	BB/ICT
		Total		**11**		

UNIT - II

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Reqd.	Pedagogy	Teaching aids
1.		**Data Pre-processing**: Identify reasons for pre-processing the data.	K1	1	Lecture	BB/ICT
2.	CO2	Describe Descriptive Data Summarization.	K2	1	Lecture + discussion	BB/ICT
3.		Explain Data Cleaning techniques.	K2	2	Lecture + discussion	BB/ICT
4.		Discuss Data Integration and Data	K2	2	Lecture + discussion	BB/ICT

S.No.		Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Reqd.	Pedagogy	Teaching aids
		Transformation techniques				
5.		Explain Data Reduction techniques.	K2	2	Lecture + discussion	BB/ICT
6.		Discuss Data Discretization and Concept Hierarchy Generation.	K2	2	Lecture + discussion	BB/ICT
		Total		**10**		

UNIT - III

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Reqd.	Pedagogy	Teaching aids
1.		Illustrate the concept of Association Analysis	K2	2	Lecture + discussion	BB/ICT
2.		Explain Frequent Item set generation process.	K2	2	Lecture + discussion	BB/ICT
3.		Discover Association Rules from the given data.	K3	2	Lecture + discussion and In-class Assignment	BB/ICT
4.	C03	Present a Compact representation of frequent item sets.	K1	1	Lecture	BB/ICT
5.		Use FP-Growth Algorithm for Association Analysis.	K3	2	Lecture + discussion and In-class Assignment	BB/ICT
		Total		**9**		

UNIT - IV

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Reqd.	Pedagogy	Teaching aids
1.		**Classification** : Describe the basic concepts of Classification	K1	1	Lecture	BB/ICT
2.	CO4	Illustrate the approach for solving a classification problem.	K2	1	Lecture + discussion	BB/ICT
3.		Explain the concept of a Decision Tree Induction	K2	2	Lecture + discussion	BB/ICT
4.		Construct a decision tree.	K3	1	Lecture + discussion	BB/ICT

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Reqd.	Pedagogy	Teaching aids
					and In-class Assignment	
5.		Describe the methods for expressing an attribute test conditions.	K2	1	Lecture + discussion	BB/ICT
6.		Identify the measures for selecting the best split.	K2	1	Lecture + discussion	BB/ICT
7.		Illustrate Tree Pruning	K3	2	Lecture + discussion and In-class Assignment	BB/ICT
		Total		**09**		

UNIT - V

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Reqd.	Pedagogy	Teaching aids
1.		**Classification : Alternative techniques** Explain Bayes' Theorem	K2	2	Lecture+ discussion	BB/ICT
2.	CO5	Apply Naïve Bayesian Classification Algorithm	K3	2	Lecture + discussion and In-class Assignment	BB/ICT
3.		Explain the concept of Bayesian Belief Networks	K2	2	Lecture + discussion	BB/ICT
		Total		**06**		

24

Web Technologies

Academic Year: 2023-24   **Programme: B.Tech**
Year/ Semester: V   **Section: A,B,C,D**
Name of the Course: Web Technologies   **CourseCode : V20CST12**

Course Outcomes (Along with Knowledge Level):

After successful completion of course the student will able to

S.No.	CO No.	Course Outcome	BTL
1.	CO1	Illustrate the basic concepts of HTML and CSS.	K2
2.	CO2	Illustrate Extensible markup language and XML parsers	K3
3.	CO3	Develop web applications using JDBC	K3
4.	CO4	Build database driven web applications using JSP	K3
5.	CO5	Illustrate the basic concepts of Angular and NODE JS.	K2

Text Books:

1. Programming the World Wide Web, 7th Edition, Robet W Sebesta, Pearson, 2013.

2. Node.js, MongoDB and Angular Web Development, 2nd Edition,BradDayley Brendan Dayley

 Caleb Dayley,Pearson Education,2018

3. JSP:The Complete reference,PhilHanna,The McGraw-Hill Copanies,2001.

4. JDBC, Servlets, and JSP, New Edition, Santhosh Kumar K, Kogent Learning Solutions Inc,

Dreamtech Press, 2018.

Reference Books:

1. Web Technologies: HTML, JavaScript, PHP, Java, JSP, XML and AJAX, Black book, Dream Tech.

2. An Introduction to Web Design, Programming, Paul S Wang, Sanda S Katila, Cengage Learning

3. Web Technologies, 1st Edition 7th impression, Uttam K Roy, Oxford, 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	55	55	55	55	55
	Level 1	50	50	50	50	50

Lecture Plan:

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1	CO1	Describe Basic Syntax, Standard HTML Document Structure	K1	1	Lecture	BB
		Describe Basic HTML Tags	K1	1	Lecture	BB+ICT
		Explain Lists, Tables, Images	K2	2	Lecture	BB+ICT
		Explain Forms, Frames	K2	2	Lecture	BB+ICT
		Discuss Cascading style sheets, levels of style sheets and its formats	K2	2	Lecture	BB+ICT
		List Properties of Cascading style sheets	K1	2	Lecture	BB+ICT
		Explain Selector Forms	K2	2	Lecture	BB+ICT
		Explain List Properties, Colour and alignment of text	K2	3	Lecture	BB+ICT
2	CO2	Explain of XML , Syntax, XML Document Structure	K2	3	Lecture	BB+ICT
		Explain XML, Document type Definition, XML schemas, Name spaces	K2	3	Lecture	BB
		Demonstrate Document object model, XSLT,	K3	3	Lecture with Discussion	BB+ICT
		Illustrate DOM and SAX parsers	K3	3	Lecture with Discussion	BB+ICT
3	CO3	Define about JDBC	K1	1	Lecture	BB+ICT
		Describe about ODBC	K1	1	Lecture	BB+ICT
		Explain about JDBC	K1	1	Lecture	BB+ICT
		Explain the Components of JDBC	K1	2	Lecture	BB+ICT
		Explain about JDBC Architecture	K1	1	Lecture	BB
		Explain about Types of Drivers	K1	1	Lecture	BB
		Demonstrate JDBC APIs	K3	3	Lecture	ICT
		Define a Simple Application with JDBC	K1	2	Lecture	ICT
		Explain about how to work prepared Statement	K2	2	Lecture	BB+ICT

4	CO4	Explain Servlets, Life cycle of Servlet,	K2	2	Lecture	BB+ICT
		List the Limitations of servlets, JSP Overview,	K1	2	Lecture	BB
		Explain Components of a JSP Page: Directives, comments, Expressions, Scriptlets ,	K2	3	Lecture	BB
		Explain Components of a JSP Page: Declarations, implicit objects, Database Access, session tracking	K2	4	Lecture	BB+ICT
5	**CO5**	Demonstrate installing Node JS	K3	1	Lecture	BB+ICT
		Explain Working with Node Packages.	K2	1	Lecture	BB
		Demonstrate with Node JS Application	K2	2	Lecture	BB+ICT
		Understand of Angular, Modules, Directives,	K1	2	Lecture with Discussion	BB+ICT
		Explain Data Binding, Dependency Injection, Services	K2	3	Lecture	BB+ICT
		Explain about Separation of Responsibilities, Creating a Basic Angular Application.	K3	3	Lecture with Discussion	BB+ICT

Total Hours = 64 Hours

Mastering Coding and Competitive Programming

Academic Year: 2023-24   **Programme: B.Tech**
Year/ Semester: V   **Section: A,B,C,D**
Name of the Course: Mastering Coding and Competitive Programming Lab

Course Code :   V20CSTJE01

Course Outcomes (Along with Knowledge Level):

After successful completion of course the student will able to

Lecture Plan:

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1	CO1	Develop Programs to solve problems based on Mathematical logic, Reasoning and number theory	K3	10	Lecture With Discussion	ICT
2	CO2	Develop programs using different techniques to find prime number	K3	10	Lecture With Discussion	ICT
3	CO3	Develop programs using Sieve method and optimize Complexity of finding prime number	K3	12	Lecture With Discussion	ICT
4	CO4	Develop programs based on series, patterns and	K4	16	Lecture With Discussion	ICT
		Develop programs on concept of Fibonacci series	K3			
		Develop programs on strings including palindrome and anagram concepts	K3			
5	CO5	Develop programs to search pattern in a string	K3	12	Lecture With Discussion	ICT
		Demonstrate DDL, DML commands and queries	K2			

Total No. of Classes: 60

Artificial Intelligence

Academic Year: 2023-24   **Programme: B.Tech**
Year/ Semester: V   **Section: A,B,C,D**
Name of the Course: Artificial Intelligence   **Course Code :   V20CSTPE20**

Course Outcomes (Along with Knowledge Level):

After successful completion of course the student will able to

CO	Course Outcomes	Knowledge Level
1	Discuss the foundations of AI.	K2
2	Identify Search Strategies for Problem Solving.	K2
3	Illustrate Adversarial Search for Game Playing.	K2
4	Discuss Reasoning approaches.	K2
5	Illustrate Knowledge Representation approaches.	K2

TEXTBOOKS:

1. Artificial Intelligence : A Modern Approach, Stuart J. Russell and Peter Norvig, 3rd Edition, PrenticeHall.
2. Artificial Intelligence, Elaine Rich,Kevin Knight, Shivashankar B Nair, 3rd Edition,Tata McGraw-Hill.

REFERENCE BOOKS:

1.Artificial   Intelligence,   George   F   Luger,   Pearson   Education   Publications.
2. Artificial Intelligence, Saroj Kaushik, 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:

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours required	Pedagogy	Teaching aids
1		Dissemination of Department Vision, Mission, PEOs, POs, PSOs	-	-	-	
		Explain AI Introduction	K2	1	Lecture	ICT
2		Explain what is AI	K2	1	Lecture With Discussion	ICT
3		Discuss foundations of AI	K2	2	Lecture With Discussion	ICT
4		Discuss history of AI	K2	2	Lecture With Discussion	ICT
5	CO 1	Discuss the state of art of applications	K2	1	Lecture With Discussion	ICT
6		Describe agents,environments	K2	1	Lecture With Discussion	ICT
7		Discuss the concept of rationality	K2	1	Lecture With Discussion	ICT
8		Discuss the nature of environments	K2	1	Lecture With Discussion	ICT
9		Discuss the Structure of agents	K2	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		Discuss Problem solving agents	K2	2	Lecture with Discussion and in class Assignment	ICT
2	CO 2	Illustrate Example problems	K2	2	Lecture with Discussion and in class Assignment	ICT
3		Illustrate Searching for solutions	K2	2	Lecture with Discussion and in class Assignment	ICT
4		Explain Uniformed search	K2	2	Lecture	ICT

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
		strategies			with Discussion and in class Assignment	
5		Explain Informed(Heuristic) search strategies	K2	2	Lecture with Discussion and in class Assignment	ICT
6		Explain Heuristic functions	K2	2	Lecture with Discussion and in class Assignment	ICT
7		Discuss Local search algorithms and optimization problems	K2	2	Lecture with Discussion and in class Assignment	ICT
14						

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1		Explain Games	K2	1	Lecture with Discussion	BB/ICT
2		Discuss Optimal decisions in games	K2	1	Lecture with Discussion	BB/ICT
3		Discuss Alpha-Beta pruning	K2	1	Lecture with Discussion	BB/ICT
4		Describe Imperfect real time decisions	K2	1	Lecture with Discussion	BB/ICT
5	CO 3	Describe Stochastic games	K2	1	Lecture with Discussion	BB/ICT
6		Describe Partially observable games	K2	2	Lecture with Discussion	BB/ICT
7		Explain State of art of game programs	K2	2	Lecture with Discussion	BB/ICT
8		Discuss Alternative approaches	K2	1	Lecture with Discussion	BB/ICT
10						

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1		Explain Propositional Logic	K2	1	Lecture with Discussion	BB/ICT
2		Discuss Propositional Theorem proving	K2	2	Lecture with Discussion	BB/ICT
3		Discuss Syntax and Semantics of First order logic	K2	2	Lecture with Discussion	BB/ICT
4	CO 4	Explain first order logic	K2	2	Lecture with Discussion	BB/ICT
5		Describe Forward chaining	K2	1	Lecture with Discussion	BB/ICT
6		Describe Backward chaining	K2	1	Lecture with Discussion	BB/ICT
7		Discuss Resolution	K2	2	Lecture with Discussion	BB/ICT
				11		

S.No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1		Explain Knowledge representation and mapping	K2	2	Lecture with Discussion	BB/ICT
2		Discuss the Approaches to knowledge representation	K2	2	Lecture with Discussion	BB/ICT
3		Describe Simple relational knowledge	K2	2	Lecture with Discussion	BB/ICT
4		Describe Inheritable knowledge	K2	2	Lecture with Discussion	BB/ICT
5	CO 5	Describe Inferential knowledge	K2	2	Lecture with Discussion	BB/ICT
6		Describe Procedural knowledge	K2	1	Lecture with Discussion	BB/ICT
7		Discuss the Issues in knowledge representation	K2	1	Lecture with Discussion	BB/ICT
8		Explain the frame problem	K2	1	Lecture with Discussion	BB/ICT
				13		

Total classes: 60

Data Mining Lab

Academic Year: 2023-24   **Programme: B.Tech**
Year/ Semester: V   **Section: A,B,C,D**
Name of the Course: Data Mining Lab   **Course Code : V20CSL09**

Course Outcomes (Along with Knowledge Level):

After successful completion of course the student will able to

CO	Course Outcomes	Knowledge Level
1	Demonstrate Data Pre-processing techniques	K3
2	Demonstrate Association Rule Mining techniques.	K3
3	Demonstrate Classification techniques.	K3
4	Demonstrate the Clustering techniques.	K3

REFERENCE BOOKS:
1. Data Mining: Practical Machine Learning Tools and Techniques, Ian H. Witten, Eibe Frank, Mark A. Hall, 3rd Edition, Morgan Kaufmann Publishers
2. Data Mining Concepts and Techniques, Jiawei Han, Micheline Kamber, Jian Pei, 3rd Edition, Morgan Kaufmann Publishers
3. Introduction to Data Mining, Pang-Ning Tan, Michael Steinbach, Vipin Kumar, 1st Edition, Pearson Education Inc.

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

COs		CO1	CO2	CO3	CO4
Targeted Proficiency Level		75	75	75	75
Targeted level of Attainment	Level 3	70	70	70	70
	Level 2	65	65	65	65
	Level 1	60	60	60	60

Lecture Plan:

S. No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours Required	Pedagogy	Teaching aids
1	CO 1	Demonstrate Data Preprocessing on predefined Weka dataset labor.arff	K3	3	Lecture With Discussion	ICT
		Create a student.arff dataset and Demonstrate Data Preprocessing on it	K3	3	Lecture With Discussion	ICT
2	CO2	Demonstrate Association rule process on predefined Weka dataset contact lenses.arff using a priori algorithm.	K3	3	Lecture With Discussion	ICT
		Create an employee.arff dataset and demonstrate Association rule process on it using a priori algorithm	K3	3	Lecture With Discussion	ICT
3	CO3	Demonstrate Classification process on student.arff dataset using j48 algorithm	K3	3	Lecture With Discussion	ICT
		Demonstrate Classification process on employee.arff dataset using id3 algorithm	K3	3	Lecture With Discussion	ICT
		Demonstrate Classification process on employee.arff dataset using Naïve Bayes algorithm	K3	3	Lecture With Discussion	ICT
		Create a customer.arff dataset and demonstrate Classification process on it using j48 algorithm	K3	3	Lecture With Discussion	ICT
4	C04	Demonstrate Clustering process on predefined Weka dataset iris.arff using simple k-means algorithm	K3	3	Lecture With Discussion	ICT
		Demonstrate Clustering process on dataset student.arff using simple k- means algorithm	K3	3	Lecture With Discussion	ICT

Total Hours: 30

Web Technologies Lab

Academic Year: 2023-24   **Programme: B.Tech**
Year/ Semester: V   **Section: A,B,C& D**
Name of the Course: Web Technologies Lab

                                                      CourseCode:V20CSL10

LESSON PLAN

COURSE OUTCOMES (Along with Knowledge Level):

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

CO1	Develop static web pages using HTML, CSS.	K3
CO2	Demonstrate the concept of Extensible markup language (XML) and DTD.	K2
CO3	Construct web applications using JSP and Insert the data into Database Using JDBC Connectivity	K3
CO4	Develop Dynamic web applications using JSP.	K3
CO5	Develop a Simple Node JS and Angular JS Form	K2

Reference Books:
 1. Web Technologies: HTML, JavaScript, PHP, Java, JSP, XML and AJAX, Black book, Dream Tech.
2. An Introduction to Web Design, Programming, Paul S Wang, Sanda S Katila, Cengage Learning
3. Web Technologies, 1st Edition 7th impression, Uttam K Roy, Oxford, 2012

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 Required	Pedagogy	Teaching aids
1	CO 1	Dissemination of Department Vision, Mission, PEOs, POs, PSOs	-	-	-	
		Design HTML fundamental constructs. (i) Headings (ii) Links (iii) Paragraph (iv) Images (v) Tables	K2	3	Lecture With Discussion	ICT
2		Design HTML fundamental constructs. (i) Frames (ii) Forms and HTML controls	K2	6	Lecture With Discussion	ICT
3		Design Cascading style sheets (i) Internal (ii) External (iii) Inline	K2	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	Write an XML file which will display the Book information which includes the following: (i) Title of the book (ii) Author Name (iii) ISBN number (iv) Publisher name (v) Edition (vi) Price a) Write a Document Type Definition (DTD) to validate the above XML file. (b) Write a XML Schema Definition (XSD)	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	CO3	Create JSP to insert, delete, and update the details of student into the database using JDBC connectivity.	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	CO4	Create a simple JSP to print the current Date and Time	K3	3	Lecture with Discussion	ICT
2		Develop JSP program calculates factorial values for an integer	K3	3	Lecture with Discussion	ICT

3		number, while the input is taken from an HTML form.				
		Develop JSP program shows a Sample Order Form **A Sample Order Form** 	Item	Price	Quantity	Total Price
DVD	19.99	2	39.98
CD	12.99	9	116.91
Diskette	1.99	24	47.76		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	Design a simple Angular JS form	K2	3	Lecture with Discussion	ICT
2		Design a simple Node JS application	K2	3	Lecture with Discussion	ICT

Total No. of Classes: 39

Professional Communication Skills –III

Academic Year: 2023-24   **Programme: B.Tech**

Year/ Semester: V   **Section: A,B,C,D**

Name of the Course: Professional Communication Skills –III

Course Code :V20ENT04

Course Outcomes (Along with Knowledge Level):

After successful completion of course the student will able to

CO's	Course Outcomes	Knowledge Level
CO1	Distinguish the subtle meanings of various words in different contexts, recognize similar words as well as words with contrast meanings and use them appropriately. Express writer's tone and relevant ideas using different types of writing skills and prepare resume to showcase skills and accomplishments. Organize thoughts in the discussions and express views without reticence. Develop the ability to write different types of essays in a structured way, maintaining cohesion and logic.	K4
CO2	Identify the central theme and arrange the scrambled sentences into a meaningful passage. Draft emails with appropriate subject-lines and relevant content. Compare different pairs of words, recognize the relationship between the head words and the options to siphon correct analogy Choose an appropriate word to make a sentence meaningful. Infer the meaning of the picture by thinking out of the box and speak without inhibitions and face interviews with aplomb	K2
CO3	Analyze appropriate methods of logical thinking on Ratio and Proportion, Partnership, LCM and HCF, Number System, Areas & Volumes.	K4
CO4	Demonstrate problem solving skills through the concepts of Percentages, Profit and loss, Simple Interest & Compound Interest and Allegation.	K3
CO5	Calculate the end results of Cubes, Dice and Data Analysis, Time & Work, Time & Distance, Race & Games.	K4

Text Books:

T1: PIC-VOC

T2: VERBAL ABILITY-2

T3: WORK BOOK ON APTITUDE

Reference Books:

1. Dr.Sujani Tata et al., Pic Voc (2015) – Published by Sri Vasavi Engineering College
2. Lewis Norman, Word Power Made Easy (2008). Goyal Publishers & Distributors Pvt. Ltd.
3. Dr.Shalini Verma, Reetesh Anand, Word Power Made Handy(2017). S Chand Publications.
4. R S Aggarwal,Objective General English (2017). S Chand Publications.
5. Sunita Mishra & C.Muralikrishna, Communication Skills for Engineers (2006). Dorling Kindersley (India) Pvt. Ltd., licensees of Pearson Education in South Asia.
6. Charles W Hanson. Resume: Writing 2020 The Ultimate Guide to Writing a Resume that Lands YOU the Job! (2019).
7. Raymond Murphy. Essential Grammar in Use (1985).Cambridge University Press
8. Seely John. The Oxford Guide to Writing & Speaking (2004). Oxford University Press.
9. Jain,T.S. & Gupta. , 2010, Interviews and Group Discussions, Upkar's Publications.
10. Training & Placement cell, 2020, Workbook -1 on Aptitude, Sri Vasavi Engineering College.
11. M Tyra, 2013, Magical Book on Quicker maths, BSC Publications.
12. K Kundan & M Tyra, 2009, Practice Book on Quicker Maths, BSC Publications.
13. Dr. RS. Agarwal , 2017, Quantitative Aptitude, Sultan Chand Publications
14. Dr. RS. Agarwal, 2017, A modern approach to verbal & on verbal reasoning, Sultan Chand Publications.

Hyperlinks

1. https://www.indiabix.com/
2. https://www.campusgate.co.in/
3. https://www.questionpaper.org/

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	Infer the contextual meaning of words and its contextual usage.	K2	4	Lecture	PPT/A.V
2		Predict the Synonyms-Antonyms of words.	K2	4	Discussion	A.V
3		Develop their resume as per job description	K3	2	Lecture	PPT/A.V
4		Outline paragraphs and essays	K4	2	Lecture	A.V
5		Arrange their ideas logically and present effectively in GDs	K4	2	Lecture	PPT/A.V
6		Connect their views logically and coherently to participate in JAM, and Presentations	K4	3	Lecture	PPT/A.V
7		Relate their creative pursuit to design Advertisements	K4	1	Lecture	PPT/A.V

CO 2

S. No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 2	Recognize and master "Tenses' and 'Voice' to speak and write effectively.	K1	2	Lecture	PPT/A.V
2		Present their ideas concisely to draft Emails	K1	2	Lecture	PPT/A.V
3		Explain an unfamiliar concept or idea using an analogy.	K2	2	Lecture	PPT/A.V
4		Express their achievements and SWOT confidently to face different types of Interviews	K2	2	Lecture	PPT/A.V
5		Interpret the given picture and write a creative paragraph using writing strategies	K2	2	Lecture	PPT/A.V

CO 3

S. No.	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1	CO 3	Identify the Next letter or Number in a correct Relation.	K4	2	Lecture	PPT/A.V
2		Justify the relation between words and Numbers.	K4	2	Lecture	PPT/A.V
3		Identify different one from group of terms.	K4	2	Lecture	PPT/A.V
4		Describe their Rank in a class or in a Computation.	K4	2	Lecture	PPT/A.V

CO 4

S. No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1		Classify the ages in family members/ Explain the relation between numbers.	K3	2	Lecture	PPT/A.V
2	CO 4	Calculate the Actual time in Mirror and Water/ Classify the Images.	K3	2	Lecture	PPT/A.V
3		Differentiate the logic behind the conclusions.	K3	2	Lecture	PPT/A.V
4		Explain the logic for a given problem.	K3	2	Lecture	PPT/A.V

CO 5

S. No	Course Outcome	Intended Learning Outcomes (ILO)	Knowledge Level of ILO	No. of Hours	Pedagogy	Teaching aids
1		Choose the correct relation between the persons.	K4	2	Lecture	PPT/A.V
2		Show the correct direction.	K4	2	Lecture	PPT/A.V
3		Calculate the Average of data.	K4	2	Lecture	PPT/A.V
4	CO 5	Relate the correct day for a given date and angle between two hands of a clock.	K4	2	Lecture	PPT/A.V
5		Intercept data.	K4	2	Lecture	PPT/A.V
6		Report theReal Time Scenarios possibility..	K4	2	Lecture	PPT/A.V

Total No. of Classes:28+28=56