

MALLA REDDY ENGINEERING COLLEGE FOR WOMEN

(Autonomous Institution-UGC, Govt. of India) Programmes Accredited by NBA & NAAC with 'A+' Grade UGC, Govt. of India National Rank Band (151-300) in NIRF-Innovation, Accepted by MHRD, Govt. of India Affiliated to JNTUH, Approved by AICTE, ISO 9001:2015 Certified Institution

# **DEPARTMENT OF INFORMATION TECHNOLOGY**

# 5.6 Innovations by the Faculty in Teaching and Learning

Teaching Learning Process (TLP) is the core of any educational institute. Faculty innovations in teaching and learning often encompass various strategies and technologies aimed at enhancing student engagement and understanding. Additionally, Innovative teaching methodologies help faculty to deliver their lectures in a faster and efficient manner thereby allowing the students to keep abreast of technological advancements. In addition, innovative teaching aids also impart rationale thinking and self-sufficient thought process in the mindsets of students by making them more proactive. MRECW has adopted Holistic education and has taken all necessary steps to curate the scheme and syllabus in the autonomy to strengthen the performance of students. This practice helps in maintaining a consistent development of the students, department and the institute.

# **GOALS:**

In order to make the teaching-learning process more effective to students, our faculty members are utilizing various innovative tools and techniques to share the knowledge, so that students can actively involve and grasp the ideas quickly. Faculty are attending various Faculty Development Programs to update their skills in field of cutting-edge technologies which make their teaching more innovative and effective.

The department will continuously strive to achieve the following goals:

• Upskilling the students learning by innovative practices.

• Enrich the students' understanding of emerging technologies, academic advancements, current trends, and social issues through creative and innovative approaches expertise of creative methods and strategies.

• Encourage the students to think creatively, to develop ideas, and to take part in various students' chapter and club activities.

To enhance the teaching-learning process, faculty members employ a variety of pedagogical methods.

The key pedagogical initiatives include:

- 1. ICT Enabled Tools Smart Classrooms
- 2. Learning Management System BEES
- 3. Online Resources
- 4. Research Based Learning
- 5. Participative Learning
  - a) Process Oriented Guided Inquiry Learning (POGIL)
  - b) WIT and WIL
  - c) SHOW and TELL
  - d) Hackathons
  - e) Ideathons
  - f) Online Certifications
  - g) Value Added Certifications
  - h) Student's Chapter Activities
- 6. Experimental Learning
  - a) Industrial Visits
  - b) Learning by Doing
  - c) Concept Canvas
  - d) Innovative Product Development
- 7. Project Based Learning
  - a) Internships/Industry Oriented Mini Projects
  - b) Research Projects
- 8. Problem Solving Methodologies
  - a) Assignments
  - b) Tutorials
  - c) Case Study
  - d) Coding Practice through CodeTantra tool and Hacker Ranking
- 9. Theory to Practice
- 10. Digital Library
- 11. Students Seminars
- 12. Group Discussions

#### 1. ICT ENABLED TOOLS – SMART CLASSROOMS

Smart Classrooms are advanced learning environments designed to make teaching and learning more effective and engaging through technology. Each classroom is equipped with a smart board, enabling faculty to deliver lessons interactively and visually, which supports an application-oriented teaching approach. The use of digital boards, multimedia presentations, videos, animations, and PowerPoint slides allow teachers to present material dynamically, catering to diverse learning styles and enhancing student engagement.

The integration of multimedia content captures students' attention, fosters a deeper understanding, and promotes long-term retention of knowledge. Digital boards provide an interactive platform where teachers can write, manipulate, and annotate content, making lessons more interactive and collaborative. This approach moves away from traditional teaching methods, allowing for more material to be covered efficiently and reducing the reliance on chalk-and-talk techniques.

#### **Smart Boards:**

Smart boards also offer educational benefits that transform the classroom experience. They allow instructors to include visual aids seamlessly, enhancing explanations and providing realtime feedback through interactive quizzes. Lessons can be recorded for future review, enabling students to revisit important concepts. This modern classroom setting not only makes learning more enjoyable but also prepares students for a technology-driven world by enhancing their technical familiarity and collaborative skills.

Here are the key aspects of its significance:

## **1. Interactive Learning**

- Facilitates a more interactive classroom environment, encouraging student participation.
- Allows for real-time annotation, drawing, and problem-solving, which can make lessons more dynamic.

#### 2. Engagement Enhancement

- Multimedia integration (audio, video, images) caters to different learning styles (visual and audio).
- Gamified learning tools and interactive activities can make learning enjoyable and impactful.

#### **3. Resource Accessibility**

- Enables access to online resources and digital content directly on the board.
- Supports a variety of file formats (PDFs, PowerPoint, video clips) for diverse teaching materials.

# 4. Collaboration and Teamwork

- Promotes group activities like brainstorming and project planning using collaborative tools.
- Multiple students can interact simultaneously on some smartboards, fostering teamwork.

# 5. Ease of Use and Flexibility

- Simple integration with computers and the internet ensures seamless operation.
- Versatile for different subjects and teaching styles. .

# 6. Saves Time and Resources

- Reduces the need for paper-based teaching aids and repetitive preparation of materials.
- Lessons can be saved, shared, or revisited for revision purposes.

# 7. Improved Learning Outcomes

- Interactive visuals and demonstrations can make complex concepts easier to understand.
- Encourages active learning, leading to better retention and comprehension.

# 8. Facilitates Remote and Hybrid Learning

- With smartboard integration, virtual classrooms become more interactive and engaging for remote students.
- Recordable lessons and live annotations enhance e-learning experiences.

# MAXHUB INTERACTIVE PANNEL - SPECIFICATIONS

- 4K Ultra High Definition Display
- Multi Touch, IR Touch (Great Touch Accuracy with +/- 1.5 mm)
- 350 nits Brightness
- 2x12 W inbuilt speaker
- Multi Touch (20 Touch, 10 Writing)
- Inbuilt 4K PC with Configuration
- (Core i5-11<sup>th</sup> Gen. Processor, 8GB RAM, 128GB SSD, Windows 10 OS)



# 2. LEARNING MANAGEMENT SYSTEM – BEES - COURSE MATERIALS PREPARED BY OUR FACULTY OF ALL COURSES ARE AVAILABLE

BEES Learning Management System (LMS) is a digital platform designed to streamline the administration, documentation, tracking, and delivery of educational content. BEES LMS platforms are used by institutions to create, distribute, and manage course materials in an organized and accessible manner, enabling a more flexible and efficient learning experience for both students and instructors.

Through BEES LMS, faculty can upload and share various resources like lecture notes, assignments, quizzes, videos, and interactive content, making it easy for students to access study materials anytime and from anywhere.

The Attendance module in BEES Software, is designed to streamline attendance tracking and enhance student engagement by providing an efficient, accurate, and accessible system for managing attendance records. This tool allows faculty to record attendance digitally, reducing administrative effort and ensuring real-time accuracy. The system provides students and instructors with a clear view of attendance status, supporting greater transparency and accountability.

By centralizing resources and communication, BEES LMS enhance the learning process, making it more engaging, accessible, and manageable in today's digital landscape.

### ERP WEBISTE/SOFTWARE – ADMIN MANAGEMENT

#### Link to the ERP Website: https://mrecwexamcell.com/BeesERP/Login.aspx

Autonomous Institu	tion, UGC, Govt. of India
Accredited by NB	A & NAAC with 'A' Grade
NIRF Indian Ranking, Ar	ccepted by MHRD Govt. of India
Band A Rank(6 <sup>th</sup> to 25 <sup>th</sup> ) ;	National Ranking by ARIA-2020
Maisammaguda, Dhulapall	y. Secunderabad. Tetangana-500100
Www.mail	lareddyecw.com
Student Office 365 Login	B
OPAC	User Name

🏀 MAL	LA REDDY		SOFTWA	e-CONT	TENT	) () ()
			Welcome	e to BeeS ERP : Click on a	ny of the Modules to Start with yo	our ERP Solutions
EMy Profile	Academics	Examination	₹PayRoll	&Self Appraint	Material Uploading Material Upload to Hod	
2		É Employee Id		1-3; Assistan kvrajeshh() 8	241935887 at Professor 1-CSE Øgmail.com 096774427	
		<ul> <li>PAN Number</li> <li>Aadhar Id</li> <li>Father Name</li> <li>Mother Name</li> </ul>		K RAMAKOTES	SWARA RAO	
Day Tin	ne Table			_		

# ERP SOFTWARE e-CONTENT

Select Det	ails											
Batch:*	Program:	Branch:	Sem:*	ē.	Section:*	Subject:		Materi	al Type:			
2023 - 🗸	B.TECH ¥	CSE	✓ I/IV	I SEM	• A •		1	✓ Lectu	re Notes	*	I 1	
Topic Nam	e:	Unit:					4					
		UNIT-1		~								
Uploaded	Material Detail											
Batch	Program	s Branch	Sem	Section	Subject	Uploaded Date	File Type	MaterialType Name	Topic Name	Unit	View	Delet
Batch 2021 - 2022	Program B.TECH	s Branch CSE	Sem IIUIV II SEM	Section A	Subject Compiler Design	Uploaded Date 2022-04-12	File Type	MaterialType Name PPT	Topic Name PHASES OF COMPI LER	Unit UNIT-1	View View	Delet
Batch 2021 - 2022 2021 - 2022	Program B.TECH B.TECH	Branch CSE ECE	Sem IIVIV II SEM VIV II SEM	Section A ECE-B	Subject Compiler Design Programming for Problem So Iving	Uploaded Date 2022-04-12 2022-05-02	File Type ppt pptx	MaterialType Name PPT PPT	Topic Name PHASES OF COMPI LER Introduction to C & C- Tokens	Unit UNIT-1 UNIT-1	View View View	Delet
Batch 2021 - 2022 2021 - 2022 2021 - 2022	Program B.TECH B.TECH B.TECH	s Branch CSE ECE ECE	Sem IIUIV II SEM IIVIV II SEM IIIV II SEM	A A ECE-B ECE-B	Subject Compiler Design Programming for Problem So Wrig Programming for Problem So Wrig	Uploaded Date 2022-04-12 2022-05-02 2022-06-15	File Type .ppt .pptx .pptx	MaterialType Name PPT PPT PPT	Topic Name PHASES OF COMPI LER Introduction to C & C- Tokens UNIT-2 Selective stat ements.joops,arrays, strings	Unit UNIT-1 UNIT-1 UNIT-2	View View View View	Deleti Deleti Deleti Deleti
Batch 2021 - 2022 2021 - 2022 2021 - 2022 2021 - 2022 2021 - 2022	Program B.TECH B.TECH B.TECH B.TECH	s Branch CSE ECE ECE ECE	Sem IIUV II SEM IIVV II SEM IIVV II SEM IIVV II SEM	Section       A       ECE-B       ECE-B       ECE-B	Subject           Compiler Design           Programming for Problem So Wing           Programming for Problem So Wing           Programming for Problem So Wing	Uploaded Date 2022-04-12 2022-05-02 2022-06-15 2022-06-23	File Type       .ppt       .pptx       .pptx       .pptx	MaterialType Name PPT PPT PPT PPT	Topic Name PHASES OF COMPI LER Introduction to C & C Tokens UNIT-2 Selective stat ements Joops,arrays, strings FUNCTIONS	Unit UNIT-1 UNIT-1 UNIT-2 UNIT-3	View View View View View View View	Delet Delet Delet Delet Delet
Batch 2021 - 2022 2021 - 2022 2021 - 2022 2021 - 2022 2021 - 2022 2020 - 2021	Program           B.TECH           B.TECH           B.TECH           B.TECH           B.TECH           B.TECH	s Branch CSE ECE ECE ECE ECE ECE	Sem IIJIV II SEM IIVI II SEM IIVI II SEM IIVI II SEM	A A ECE-B ECE-B ECE-B A	Subject Compiler Design Programming for Problem So Iving Programming for Problem So Iving Programming for Problem So Iving Automata & Compiler Design	Uploaded Date 2022-04-12 2022-05-02 2022-06-15 2022-06-23 2022-10-12	File Type pp1 pp1x pp2x pp2x pp2x	MaterialType Name PPT PPT PPT PPT PPT	Topic Name PHASES OF COMPI LER Introduction to C & C- Tokens UNIT-2 Selective stat ements.loops.arrays, strings FUNCTIONS PHASES OF COMPI LER & LEXICAL ANA	Unit UNIT-1 UNIT-1 UNIT-2 UNIT-3	View View View View View View View View	Dele Dele Dele Dele Dele

#### 3. ONLINE RESOURCES – VIDEO LECTURES OF OUR FACULTY

Online resources have become an essential part of education and learning, providing students and professionals with easy access to a vast array of information and tools. These resources include educational websites, e-books, academic journals, videos, and interactive tutorials, which cater to various learning styles and subjects. The flexibility of accessing these materials anytime and anywhere allows learners to study at their own pace, deepening their understanding of topics and enhancing their skills. Additionally, online resources often feature up-to-date information, enabling users to stay current with the latest advancements in their fields.

Online resources support collaborative learning and communication through platforms like discussion forums, online courses, and social media groups, where individuals can share ideas, solve problems, and receive feedback from peers and experts. The availability of online certifications, virtual labs, and practice tests also helps learners gain practical experience and validate their skills. As a result, online resources play a significant role in democratizing education, making learning opportunities accessible to a wider audience across the globe.

#### 4. RESEARCH BASED LEARNING

Research-Based Learning (RBL) encourages students to engage in hands-on, practical approaches, either through research or the creation of tangible products.

Collaborative learning, on the other hand, is an instructional strategy where groups of students work together to solve problems, complete tasks, or create products. This approach enhances student engagement, fosters teamwork, improves problem-solving abilities, and promotes the development of positive interpersonal relationships.



**Research Projects -incubation center** 

Sl.No	H.T No	Name of the Student	Title of the Project	Guide Name	PUBLICATION DETAILS
	20RH1A1232	B.Sai Sruthi	THE INTELLIGENCE		Journal of Science a
	20RH1A1201	A Manisha Kumari	AMBULANCE:		Technology
			BRIDGING AI AND HUMAN INTERACTION		ISSN: 2450-5660 Volume & Issue 12(D
1	21RH5A1202	B.Vaishnavi	TECHNOLOGIES	Dr.S.Samreen	-2023)
	20RH1A1223	B.Nikitha			IRACST –
	20RH1A1222	B Aniali			International
					Journal of Computer
					Networks and
					Wireless
			Active Online Learning for		Communications
			Support Crisis	Dr. Subba	2250-3501 Vol.13.
2	21RH5A1201	A.Sirichandana	Management	Reddy	No 4, DEC 2023
	20RH1A1202	A.Akshaya			IRACST –
	20RH1A1217	B.Sruthi			International
					Computer
					Networks and
					Wireless
			File Protection through		(IJCNWC).
			Multi-Image		ISSN: 2250-3501
			Steganography with Pixel	M.	Vol.13, No 4, DEC
3	20RH1A1228	B.Lavanya	Value Differencing	Premchender	2023
	20RH1A1214	B Gayatri			and
	20RH1A1215	B Rekha	Deep CNN Framework for		TechnologyISSN:
			Object Detection and	Dr Subba	2456-5660 Volume
4	20RH1A1216	B Akshitha	Real Time Videos	Reddy Borra	8, Issue 12(Dec - 2023)
	20RH1A1209	A.Geethika			Science,
	20RH1A1230	B.Lakshmi			Development
					ISSN : 0950-0707
					Volume XII Issue
			Accidents Detection and		XII DECEMBER
			Intelligent Road Traffic		2025
5	20RH1A1258	G.Rakshitha	Monitoring	C.Rashmi	
	20RH1A1212	A. Joshna			International
	21RH5A1204	Ch. Chandana Priya	Exploring the complex		Engineering &
			relationship between		Science Research
			Asthma and Air pollution		IJESR/DEC 2023/
			in urban regions: an accurate and reliable		10
6	20RH1A1205	A.Swathi	predictive model	N. Baby Rani	ISSN 2277-2685
	20RH1A1207	Akshaya			Journal of
	20RH1A1229	B.sraveena			Cycle Research
					,
					Volume XVI, Issue
			Blockchain-Based		1, January/2024
			Traceability in Health Care	P. Devandar	ISSN NO: 0022-
7	20RH1A1233	B.satya sahithi	Supply Chain	Babu	1945
	20RH1A1241	Ch.Arpana	Advanced Neural Network	P.Anil	Journal of Science
8	20RH1A1242	D. Spandana Reddy	architecture for detecting	Jawalkar	and rechnology

# Student Publications for the Academic Year: 2023-24

			fraud in internet loan		Volumo & Issue
			applications		12(Dec -2023)
	20RH1A1244	D . Sheetal Reddy			ISSN: 2456-5660
	20RH1A1231	B.Sai siri	-		Journal of Interdisciplinary
	20RH1A1243	D.Harshitha	-		Cycle Research
			Advanced Hops Classification for Precision		Volume XVI, Issue I, January/2024
9	20RH1A1248	E Supraia	Crop Management and Quality Harvests	J. David Livingston	ISSN NO: 0022- 1945
	20RH1A1208	A Srirupa		Livingston	Journal of
	20RH1A1238	Ch.Kavva	-		Interdisciplinary
10	20RH1A1236	CH.Naga Shilpa	Deep Learning-based Approach for Bird Species Identification and Classification	K. Kumar swamy	Volume XVI, Issue I, January/2024 ISSN NO: 0022- 1945
	20RH1A1225	B.Sravya			IJESR International
	20RH1A1239	Ch.Varshini	-		Journal of Engineering &
11	20RH1A1249	GO. Ankitha	Predicting Fire Alarms using Multi-Sensor Data: A Binary Classification Approach	Mr.Ayub Baig	Science Research DEC 2023/ Vol-13/Issue-4/1- 15 ISSN 2277-2685
	20RH1A1210	A.Kalyani	_		RACSI – International
	20RH1A1256	G.Keerthi	-		Journal of
12	20RH1A1257	G.Tejaswi	Enhancing Cybersecurity: A Unified Approach using eXplainable AI and Open- Source Intelligence for Botnet Detection	Mr.D. Shine Rajesh	Computer Networks and Wireless Communications (IJCNWC), Vol.13, No 4, Dec 2023 ISSN: 2250-3501
	20RH1A1218	B.Neelima	_		Journal of
	20RH1A1240	Ch.Varsha	-		Cycle Research
13	2021141251	G Nikitha	ML-Driven Waste Classification for Effective Organic and Non-Organic Waste Management	Mr.V. Arun	Volume XVI, Issue I, January/2024 ISSN NO: 0022- 1945
1.5	20RH1A1254	Gleba	waste management	ixuillai	IRACST –
	20RH1A1259	G.Sweia	1		International
	201111120	0.0.00	Securing the pulse of Smart cities:Advanced methods for detecting false data injection in jot based	Ms.B. Haritha	Journal of Computer Networks and Wireless Communications (IJCNWC), Vol.13, No 4, DEC 2023
14	20RH1A1260	G.Swetha	smart grids	Lakshmi	ISSN: 2250-3501
	20RH1A1252	G. Vaishnavi	Machine learning based	Ms.S. Sunil	Journal of
15	20RH1A1253	G. Sneha	crop recommendation	Kumar	intercisciplinary

			system for enhanced yield		Cycle Research
			production		Volumo VVI Jaguo
					I, January/2024
	20PH1A1255	G Sushma			ISSN NO: 0022-
	20RH1A1213	B Samyuktha			Science,
	20RIIIA1213	D.SalityuKula	-		Technology and
	20KH1A1224	B.Alsnwarya			Development
			Predictive Analytics for		Volume XII Issue
			Optimal Water		XII DECEMBER
			Management in Smart	MDD	2023
16	20RH1A1237	CH Hima Bindhu	Node-MCU data	Ms.B. Durga Bhayani	ISSN · 0950-0707
10	20RH1A1203	A Rohini		Diavain	IRACST –
	20RH1A1204	A Sravika	-		International
	201011111204	A.Stavika	-		Journal of Computer
					Networks and
					Wireless
			Analytical Approach for		Communications
			Forensic Investigation of		Vol.14, No 1, JAN
			Bitcoin Transaction		2024
17	20RH1A1206	A.Harini	Network	Dr.N. Sateesh	ISSN: 2250-3501
	20RH1A1211	A.lohitha	-		International
	20RH1A1226	B. swathi	-		Journal of
					Computer
					Wireless
			Proactive Stress Detection		Communications
			Among Employees:		(IJCNWC),
			Leveraging Machine		Vol 14, No 1, JAN 2024
18	20RH1A1235	Ch. swathi	Early Interventions	Dr.N. Sateesh	ISSN: 2250-3501
	20RH1A1245	D.Pranathi			Journal of
	20RH1A1246	D.Pravalika			Cycle Research
			Exploring the Relationship		Volume XVI, Issue
			and Energy Consumption		1, January/2024
			in Smart Homes: A	Dr Subba	ISSN NO: 0022-
19	20RH1A1250	G.Harika	Regression Analysis	Reddy Borra	1945
	20RH1A1219	B. Poojitha	AI-powered Approach for		Journal of Science
	20RH1A1221	B.Pravalika	Accident Occurance		Volume 8, Issue
20	200011141220		Alerting from Traffic	DECC	12(Dec -2023)
20	20KH1A1220	B.Ashwitha	Enhancing Search	Dr.S. Samreen	ISSIN: 2456-5660
	20KH1A12//	K.Harshitha	Advertising Recognition:		and Technology
	20KH1A1295	K.Nena	A Comprehensive Study		ISSN: 2456-5660
			on Feature Engineering Techniques and Their		volume $\delta$ , Issue $12(\text{Dec} - 2023)$
			Impact on User		12(1900-2023)
21	20RH1A1273	K Sai Sindhusha	Engagement	Ms.S. Samreen	
	20RH1A1285	K.Ritwika	AI-Enhanced Fault		IJESR International
	20RH1A1264	G.Srujana	Classification in Robotic		Engineering &
			Manipulators for Enhanced	Dr Subba	Science Research
22	20RH1A1265	G.Jyothirmai	Safety and Reliability in	Reddy Borra	ISSN 2277-2685

			Industrial Automation		/DEC 2023/ Vol-
					13/Issue-4/1-7
	20RH1A12A0	M Vaishnavi	_		Journal of
	20RH1A1297	K Pratyusha	Startup Forecasting: A		Engineering &
			Data-Driven Approach		Science Research.
			Using Artificial		ISSN 2277-2685 UESR/DEC_2023/
			Success Prediction and	Mr.M.Premche	Vol-13/Issue-4/1-
23	20RH1A1294	K Rajitha	Informed Decision-Making	nder	15
	20RH1A1296	K.Spandana			Science, Technology and
	20RH1A1262	G.Archana			Development
			Optimizing Cloud Storage:		
			Addressing Data		Volume XII Issue
			Through Dynamic Cloud		2023
24	20RH1A1276	K.Rasmika	Storage Virtualization	Ms.C.Rashmi	ISSN : 0950-0707
	20RH1A1268	J.Lavanya			Journal of Interdisciplinary
	20RH1A1290	K.Sathwika	_		Cycle Research
			Real-Time Rain Fog and		Volume XVI, Issue
			Haze Removal Using		1, Junuar y 202 1
	20011141202	N C T '1 1 ' 4	OpenCV for Traffic	Ms.N. Baby	ISSN NO: 0022-
25	20RH1A12B2	M.Likhitha	Camera	ranı	1945 International
	20RH1A1263	G. Sanjana	-		Journal of
	20RH1A1271	k. Sejal			Engineering &
			for Renal Image		ISSN 2277-2685
			Classification for		IJESR/Jan. 2024/
26	20011141200	1 11	Deciphering Anomalies in	Ms.B.Durga	Vol-14/Issue-1/1-
26	20RH1A1288	K. nandhini	Kidney Structures	Bhavani	14 Science
	20RH1A12A9	M Manasa	-		Technology and
	20KH1A12A5	M.Navya	-		Development
					Volume XII Issue
			NLP-based News Articles		XII DECEMBER
			Classification to Identify	Ma D Handda	2023
2.7	20RH1A12A8	M.prasanna	In-Article Attribution for Influencing Mining System	Lakshmi	ISSN : 0950-0707
,	20RH1A1289	k.harika			Journal of
	20RH1A1291	k.harika	-		Interdisciplinary
			-		Cycle Research
					Volume XVI, Issue
			Customer Retention		I, January/2024
			Insights from Purchasing	Ms.M. Svamala	ISSN NO: 0022-
28	20RH1A1267	J.harshini	Intention Data	Sai Sree	1945
	20RH1A1282	K.Ruchitha			Science,
	20RH1A1281	K.Geethika			Development
					1
			Dredicting Workforce		Volume XII Issue
			Productivity in the		2023
			Garment Industry: A Data-		
29	20RH1A1293	K.Neha	Driven Approach	Ms.N.Teja sri	ISSN : 0950-0707
	20RH1A12A3	M Tapasya	Enhancing twitter data	Mr.V.Arun	Technology and
30	20RH1A12A4	M Priyanka	analyis : A comprhensive	Kumar	

			ML preprocessiong		Development
			approaches for sentiment		Volume XIII Issue I
			unurysis		JANUARY 2024
	20RH1A1286	K Sreeja			ISSN : 0950-0707
	20RH1A1275	K.Sahithi	_		RACST –
	20RH1A1274	K.Ramya			Journal of
					Computer
					Networks and Wireless
			machine learning		Communications
			approaches for stress affect		(IJCNWC), ISSN:
31	21RH5A1211	N pravalika	Data detection using WESAD	Mr. D. Shine Rajesh	2250-3501 Vol.14, No 1 JAN 2024
	20RH1A1299	L.Privanka	2.000	1.00000	1.0 1,011 2021
			-		Science,
			Mashina laamina fan		Technology and
20			advanced traffic	Mr. J. David	Development
32			forecasting in intelligent	Livingston	Volume XIII Issue I
			transportation systems		JANUARY 2024
	20RH1A12B1	M.pranathi			ISSN : 0950-0707
	21RH5A1210	M.Shivani			
	20RH1A1278	K. Vyshnavi			Journal of Science
22	20RH1A12B6	M.Pavana sri	Machine Learning-based		TechnologyISSN:
33			Detection of Malaria		2456-5660 Volume
	21RH5A1209	K. Bharathi	Sample Analysis	Ms.N. Teia	8, Issue 12 (Dec - 2023)
	20RH1A12B5	MP Yeshswini			International
1	20RH1A12B4	MP Jahnavi	-		Journal of
24					Science Research
54			Gesture based sign		ISSN 2277-2685
			using nintendo power		IJESR/DEC 2024/ Vol-14/Issue-1/1-
	20RH1A12C0	N Sowjanya	glove data	Ms.M. Syamala	11
	20RH1A1298	L.Niveditha	Drivacy Preserving		Science, Technology and
	20RH1A12A2	M.Varrshitha	_ Spatiotemporal Data		Development
35			Sharing: A Machine		
			Anonymization framework		JANUARY 2024
			for Ethical open data	Dr Subba	
	20RH1A12A6	M.Jayanthi	research	Reddy Borra	ISSN : 0950-0707
	20RH1A1292	K.Pooja bhavani	-		Technology and
	20RH1A12B8	Ch.Manasa	_		Development
36					Volume XIII Issue I
			GuardianNet: Advancing		JANUARY 2024
	21RH541208	K Harini	Internet Loan Security with Deep Learning AntiFraud	Dr S. Samreen	ISSN · 0950-0707
	20RH1A12R7	M. vaishnavi	Deep Dearning Anni Taud.	Di.S. Baillicell	International
	20RH1A12B3	M. jaswitha	-		Journal of
25			1		Science Research
37			Advanced Neural		
			Networks for Anticipating		ISSN 2277-2685
	20RH1A12B0	M. spoorthi	Harvest	Dr.N. Sateesh	IJESR/Jan. 2024/

					Vol-14/Issue-1/1-
	200011111212				13 Science
	20RH1A12A7 20RH1A12A1	M Nikhitha M.Sai Prasanna	-		Technology and Development
38			ENHANCING CYBERSECURITY MANAGEMENT WITH		Volume XIII Issue I JANUARY 2024
	20RH1A1266	J.sadwika	PREDICTIVE CYBER	Dr.N. Sateesh	ISSN : 0950-0707
	20RH1A12C1	N.Nikhitha	-		Technology and
	20RH1A12C2	N.Harshitha	-		Development
39	20001141208	N conkoorthone	Rainfall prediction using wavelet neural network	Ms.N.BABY	Volume XIII Issue I JANUARY 2024
	20RH1A12C8	Sothwike P		KANI	Journal of Science
	20RH1A12E8	Shravani K	-		and Technology
40	20111111217	Sillavalli.K	Intelligent Ambulance AI		ISSN: 2456 5660
			& Human Interface		Volume 8, Issue
	20RH1A12C3	N.Bhavani	Technology	Dr.S. Samreen	12(Dec -2023)
	20RH1A12G5	T.Samyuktha	A Machine Learning		JournalofSciencean
41	20RH1A12G9	U.Krishnaveni	Framework For Biometric	Dr.SUBBA	ISSN:2456-
	20011141204	т И	ML Authentication Using	REDDY	5660Volume9,Issue
	20RH1A12G4	I.Kavya	Electrocardiogram	BUKKA	Science.
	20RH1A12H9	Y.Chalthanya	-		Technology and
	20KIIIA12F1	Silleya Salilala	Diango Framework for		Development
42			Development of Fingerprint Access Based	Ms.	Volume XIII Issue I JANUARY 2024
	20RH1412F0	R Ruchitha	ATM: A Desktop	B.HARITHA I AKSHMI	ISSN · 0950-0707
	20RH1A12D1	Madhu Priva	rippileation	LARGINI	Science,
	20RH1A12C6	Nazreen Fathima			Technology and
					Development
43			Individualized Emotional		Volume XIII Issue I
			Feedback To Alleviate	Mr V ARIM	JANUARY 2024
	20RH1A12H0	vadla poojitha	intelligent tutoring system	KUMAR	ISSN : 0950-0707
	20RH1A12E6	R.sreeja			Science,
	20RH1A12E3	P.likitha	-		Development
44					
			Crypto currency Price		Volume XIII Issue I
			Analysis With Artificial	Mr.AYUB	5/11/0/11/1 2024
	20RH1A12E9	R.manasa	Intelligence	BAIG	ISSN : 0950-0707
	20RH1A12D6	P.Navya Sri	Automating E-Government Policies Hand Written		and Technology
45	20RH1A12E1	P.Sheetal	Digits Recognition and		ISSN: 2456-5660
			Text & Image Based	Dr.SUBBA	Volume 9, Issue
	20RH1A12E5	Bhavani	AI	BORRA	01(Jaii -2024)
	20RH1A12E0	P.Sahithi			Science,
46	20RH1A12D9	P.lavanya	Artificial Intelligence Tool		Development
			for Fake Account	Ms.N.TEJA	
	20RH1A12F4	Amrin	Detection.	SRI	Volume XIII Issue I

					JANUARY 2024
					ISSN : 0950-0707
	20RH1A12G6	T. Kruthika			Journal of Science
	20RH1A12G8	T.Sai Poojitha	Sarcamnet: Extension Of Lexicon Algorithm For		and TechnologyISSN <sup>.</sup>
47			Emoji-Based sarcasm	Dr.SUBBA	2456-5660 Volume
			system from Twitter data	REDDY	9, Issue 01(Jan -
	21RH5A1213	Palli Deepika		BORRA	2024)

# 5. PARTICIPATIVE LEARNING

# a. Process Oriented Guided Inquiry Learning (POGIL)

An innovative teaching approach has transformed the classroom experience beyond traditional textbooks. In a **POGIL** (Process Oriented Guided Inquiry Learning) classroom, students collaborate in teams to engage in guided inquiry exercises. This method explicitly enhances students' analytical and critical thinking abilities.

The **Guided Inquiry** component of POGIL follows a structured learning cycle of exploration, concept invention, and application. Through carefully designed materials, students actively construct new knowledge rather than passively receiving information.

To ensure effective implementation, the institution conducts pedagogical training sessions on this universal teaching method, equipping educators to facilitate dynamic and engaging learning environments.

	PO	GIL ACTIVITY FOR	M
55:	Year:	Semester:	Section:
1. Activi	ty Overview:		ar.
a. Co	urse Name:		
b. Toj	pic/Concept:		
c. Ac	tivity Title:		
d. Dai	te:		
e. Ins	tructor Name:		
f. Tea	am Members:		
2. Learn	ing Objectives:		
3. Guide	d Enquiry Learni	ing (Questions/Exercis	es/Tasks):



#### b. WIT and WIL

The definition of "WIT & WIL" method explained as an active methodology of teaching and learning activity with "Why am I Teaching & What I am Teaching" from Teacher's perspective. And from student's perspective "Why am I Learning & What I am Learning".

The terms **WIT** ("What am I Teaching" and "Why am I Teaching") and **WIL** ("What am I Learning" and "Why am I Learning") represent a transformative approach to teaching and learning. The primary objective of this initiative is to provide a clear and structured understanding of the curriculum and its applications beyond the classroom.

WIT encourages teachers to introspect before delivering a lesson, focusing on the importance, objectives, and real-life applications of the topic. It ensures that educators are well-prepared to emphasize the significance of the subject matter, fostering an engaging and meaningful learning experience.

On the other hand, **WIL** prompts students to reflect before engaging with new concepts, asking themselves where and how the knowledge can be applied. This process helps students grasp new ideas more effectively, enabling them to connect theoretical concepts to practical scenarios.

By integrating WIT and WIL into the educational framework, our college has revolutionized the traditional teaching-learning process. Students are now more enthusiastic about applying classroom concepts to real-world situations, while teachers take pride in guiding them toward achieving their goals and aspirations.

In essence, WIT and WIL have opened new dimensions for exploration and learning, transforming conventional classroom teaching into an interactive and purpose-driven experience. The figure below illustrates a sample WIT and WIL scenario.



Flow chart of WIT & WIL Methodology

All the teachers have to give their presentations on "WIT & WIL teaching plan" of their own subjects in knowledge sharing sessions before the semester. The expert committee is formed with the Deans,

			C	· WI	W	SK	Ņ	4		
Subjec	t :		Subject C	ode:		Academic Yea	r :		Number of work	ting days :
Nameo	of the Faculty Mem	ber:	Student B	ranches deals wit	th:	No. of periods	planned:		Number of Hour	rs/week :
	Why am I Teaching – What I am Teaching (WIT)				Why am I Learning – What I am Learning (WIL)					
Course Learning Objectives:				Course outcomes:						
S.No.	No. Description of Why am I teaching What I am te Topic		ching	Objective of WIL	No. of Hrs.	Method of Teaching	Ĩ	Video links		
Assign 1.	ment Questions:	For revision	of the topi	с		1				
Tutori 1.	al Questions: Invo	olves questio	ns expected	l in exams and qu	uestions	from previous o	exam pap	er for practio	ce.	
Text B	ooks:				Evaluat	tion Scheme:				Websites to browse for additional information:
Feedba	nck:				Why an	n I Learning:			What I am Learni	ing

Heads and senior faculty to check the presentations through Micro-teaching sessions. The following is the sample teaching plan for which each topic in the syllabus should be prepared in the prescribed format.

### c. SHOW and TELL:

Show & Tell is a platform designed for students to exhibit, demonstrate, and explain their projects while presenting innovative ideas in an open forum. It enables students to showcase their crossdisciplinary knowledge and the projects they have developed, fostering a deeper understanding of various domains.

This initiative creates a collaborative space where innovations are shared and shaped, paving the way for meaningful research opportunities among peers. To ensure a comprehensive learning experience, all final-year B.Tech.., students are required to present their projects on the Show & Tell platform prior to their viva voce examinations.



# d. Hackathons

Hackathons provide a platform for Students to think outside the box and explore unconventional ideas, they often result in practical solution to real-world problems. MRECW offers hackathons for the benefit of students. Hackathons are a great way to showcase their skills and creativity. Hackathons bring together individuals from diverse backgrounds, providing excellent opportunities. Participants can enhance a wide array of skills, including coding, project management, and teamwork.



#### e. Ideathons

An **Ideathon** is a competitive event where participants brainstorm and develop innovative solutions to real-world problems. It is a platform designed to encourage creative thinking and problem-solving by individuals or teams within a short time frame. Ideathons are often focused on specific themes such as sustainability, technology, social issues, or entrepreneurship, and can be organized by companies, educational institutions, or innovation hubs.

The objectives of the Ideathon are to encourage innovation by inspiring participants to generate creative ideas, foster collaboration through teamwork and networking among diverse participants, promote practical problem-solving to address real-world challenges, and provide a comprehensive learning experience through workshops, mentorship, and peer feedback.

# f) Online Certifications

Online certifications, including programs like NPTEL, Coursera, Cisco, and cloud-based platforms, offer flexible learning opportunities that support skill development and career advancement. NPTEL, an initiative by the IITs and IISc, provides courses in engineering, technology, and management, along with optional low-cost certification exams. We also have a subscription to Coursera, providing access to a wide range of courses across various fields. These resources enable learners to expand their knowledge, gain valuable credentials, and improve employability in today's competitive job market.

Online courses that offer certifications in technology, programming, and other skills help students and faculty alike build expertise and gain confidence by passing structured assessments. This learning experience exposes them to new ideas and approaches beyond their usual scope, fostering critical thinking and leadership qualities. Students have access to online resources like NPTEL, Cisco, and Coursera for enrolling in various certification courses. Faculty encourage students to earn NPTEL certifications, providing continuous guidance and mentorship, particularly with NPTEL assignments. Through video lectures and chapter quizzes, students stay engaged with the course material, testing their knowledge regularly. Upon successful completion, students earn certificates, which provide valuable credentials to enhance employability in diverse fields.

	NPTEL ONLI (Funded b This o YETUKUF for success	Elite NE CERTIFICAT by the MoE, Govt. of India) certificate is awarded to RI GOUTHAMI MAHE SWARI sfully completing the course	CION Example 2 Constraints of the second sec
	Introducti	on to Machine Learning	1.000
	with a consoli	idated score of 77 %	
	Online Assignments	23.15/25 Proctored Exam 53	5.57775
	Total number of candi	dates certified in this course: 6812	
		Jul-Sep 2024 (8 week course)	Prof. Haimanti Banerji Coordinator, NPTEL IIT Kharagpur
Indian Insti	tute of Technology Kharagpur		FREE ONLINE EDUCATION SWALVARE D Inflar work, Jean Herr
Roll No: NPTEL24CS	31S436801623 To verify the	certificate	No. of credits recommended: 2 or 3
	+++ ITTUTE C++ Institute Authorized Academy Prog	tram	Program Your Future Statement of Achievement
	LA: Programming E	ssentials in C	ed instructor, the student has
Sur Sur Isan	died the following skills:	This Statement of Achieven course CLA: Programming I to accomplish coding tasks understands the programmi used in the C language. By completing the course, th qualification CLA – C Progra Certification, from the C++ In	nent is to acknowledge that during the Essentials in C, the student has been able related to the basics of programming, and ing techniques, customs and vocabulary he student is now ready to attempt the amming Language Certified Associate institute.
DUDI	DU MANISHA	Street of the second	
MALL	A REDDY ENGINEERING COLLEGE FOR	R WOMEN.	
India Location		18 Jun 2024 Date	
For300 Instructor	090178 Got30090178		







# g) Value Added Certifications

Malla Reddy Engineering College for Women (MRECW) offers a variety of Value-Added Certification Programs to enhance students' technical expertise, industry readiness, and employability. These certifications supplement the regular curriculum and provide hands-on training in cutting-edge technologies and tools demanded by the industry.

# **Benefits of Value-Added Certifications at MRECW**

- Bridges the gap between academic knowledge and industrial needs.
- Enhances technical skills, making students job-ready.
- Adds weight to resumes and boosts placement opportunities.
- Encourages lifelong learning and professional growth.

# VALUE ADDED COURSES - CISCO

S.No	Name of the Course	Mode of the Course- offered by the HEI or Online
1	Cisco CCNA RS introduction to networks through Cicsco Networking Academy	Cisco Networking Academy Platform
2	Cisco Programming essentials in C++ through Cisco Networking Academy	Cisco Networking Academy Platform
3	Cisco Cyber Security	Cisco Networking Academy Platform
4	Cisco IoT through Cisco Networking Academy	Cisco Networking Academy Platform
5	Introduction to Cyber Security	Cisco Networking Academy Platform
6	CISCO Python Certification through Cisco Networking Academy	Cisco Networking Academy Platform
7	Cisco CCNA RS Introduction to Networks through Cisco Networking Academy	Cisco Networking Academy Platform
8	Cisco Packet Tracer	Cisco Networking Academy Platform
9	Cisco Cyber Security Essentials	Cisco Networking Academy Platform
10	Cisco Networking Essentials	Cisco Networking Academy Platform
11	Cisco Programming essentials in C through Cisco Networking Academy	Cisco Networking Academy Platform
12	Cisco CCNA Exploration:Routing Protocols and Concepts	Cisco Networking Academy Platform
13	Cisco Linux Certification through Cisco Networking Academy	Cisco Networking Academy Platform
14	Cisco Python Essentials Certification through Cisco Networking Academy	Cisco Networking Academy Platform
15	Cisco Networking Essentials 2.0 Certification through Cisco Networking Academy	Cisco Networking Academy Platform
16	Cisco Advanced Programming in C++ Certification through Cisco Networking Academy	Cisco Networking Academy Platform
17	Cisco NDG Linux Essentials Certification through Cisco Networking Academy	Cisco Networking Academy Platform
18	Cisco IoT: Connection of Things Certification through Cisco Networking Academy	Cisco Networking Academy Platform
19	Cisco IT Essentials: PC Hardware and Software Certification through Cisco Networking Academy	Cisco Networking Academy Platform
20	Cisco Advanced Programming in C Certification through Cisco Networking Academy	Cisco Networking Academy Platform
21	Cisco Networks Certification through Cisco Networking Academy	Cisco Networking Academy Platform
22	Cisco Community: Empowerment Technologies Certification through Cisco Networking Academy	Cisco Networking Academy Platform
23	Cisco Enterprise Networking, Security and Automation Certification through Cisco Networking Academy	Cisco Networking Academy Platform
24	Cisco Programming Essentials in C Certification through Cisco Networking Academy	Cisco Networking Academy Platform

# VALUE ADDED COURSES - COURSERA

S.No	Name of the Course	S.No	Name of the Course
1	Machine Learning: Predict	28	Python Data Structures
2	SQL fro beginners	29	Exploratory Data Analysis fro M.L
3	Getting started with Rstudio	30	A.I Powered Chest Disease Detection
4	Name Entity Recognition LSTEM with Keras	31	Foundations of Cyber Security
5	Securing Cisco switches with port security	32	AWS S3 Basics
6	AI context creation with DALL-E virtual SEO	33	Al fro Everyone
7	Terraform for Absolute Beginners	34	Build a Professional Resume using Canva
8	Learn about JSON with Java Script	35	Create your e-commerce store with Shopify
9	Fake Instagram Profile Detector	36	Create Informative Presentations with MS PPT
10	Sckit - Learn	37	Copywriting with Chat-GPT
11	C Programming Variable I/O	38	Chat-GPT Playground fro beginners
12	Mastering Data Analysis with Pandas	39	Basic Sentiment Analysis with Tensor FLow
13	Network and Cisco Devices	40	Build Random Foests in R with AZURE ML studio
14	use Canva to create Desktop adn Mobile user-friendly web pages	41	Al for beginners
15	Create your first web app with Python and Flask	42	Introduction to Retrieval Database and SQL
16	Exploring C	43	DOCKS for Absolute beginners
17	Unit Teting in java	44	Prompt Engineering with GPT
18	building recommendation system using MEXNET on AWS sagemaker	45	Python for Data Visualizations
10	Misial M L with vellow brick	46	Explore Stock Prices With Spark SQL
20	Ruilding test automation frame work	47	Working with Sub-Queries in SQL
21	Build a M L web and	48	Simple Past Tense
22	M L for telecom customere	49	Open AI for Beginners
22	Deep Learning for real estates	50	QA in java
23	Deep Learning for Tear estates	51	Processing Data with Python
24	Pogramming for Everybody using Python Preset Concer prediction using M I	52	Create Your First Multithread APplictaion in java
23	Diedst Galicer prediction using m.L.	53	Intermediate Relational Database and SQL
20	Evaluatem.L using tellow Drick	54	SQL functions
21	Data Analysis using Microsoft Excel	55	Data Structures

×

× T h

# VALUE ADDED COURSES - COURSERA

S.No	Name of the Course	S.No	Name of the Course
56	OOPS in java	83	Cyber Attack
57	GEN AI for Data Privacy eprotection	84	Multithreaded Apllications in java
58	Discover all features of ZOOM	85	Exploratory Data Analysis with Python in Pandas
59	Innovaticve Teaching with Chat GPT	86	Create a Python Appication using PYMONGO and MONGO DB database
60	Accessible Web Development	87	Java Script
61	HTML	88	Crash course with Python
62	Understanding Basic SQL syntax	89	Create a simple desktop app with VBnet
63	NLP:Twitter Sentiment Analysis	90	AZURE ML
64	M.L on Ptaon	91	HR Analytics
65	ML on spark	92	LINUX INTRO to SHELL
66	CNNs with Tensor Flow	93	JASDEV AI
67	AWS Sage Maker	94	Image Processing: Object Auto-Tracking using Tracker
68	Build a Data Science web app	95	Create user stories in jira
69	Create a Value Proposition Canvas	96	C++ programming: Build a calculator
70	Data Balancing with GEN-Al	97	Excel for Beginners: Introduction to spreadsheets
71	Effective Problem Solving	98	Data Analysis in R: Predictive analysis with Regression
72	Fashion Image Classification	99	Create customer support data with Microsoft Excel
73	oristic Regression with Python	100	Validating your strategy with market opportunity navigator
74	Machine Learning with PY spark	101	Small Business Marketing using youtube
75	Mastering Digital Twins	102	Predictive Modelling with Azure Machine Learning Studio
76	Regular Expression in Python	103	Editing table of content and layouts in Microsoft Word
77	Tensor Flow for Al	104	Preparation for Job Interviews
78	Generative Al	105	SQL Window functions for Analytics
79	Beginning SQL servers	106	GitHub and Visual Studio Code
80	Azure synapse using SQI	107	Machine Learning with H2O flow
81	Game Development	108	HR Analytics - Build a HR Dashboard using Power BI
82	Data Science and Al	109	Using basic formular and functions in Microsoft Excel
VL	Data Colonec and / a	110	Create a Memory Puzzle game in Python using Pygame

	VALUE ADDED COURSES			
S.No	Name of the Course	Mode of the Course- offered by the HEI or O	nline	
1	Advances in Remote Sensing Techniques for Geological Applications	ISRO-Govt of India		
2	ORACLE JAVA Certification	ORACLE Platform		
3	Hello Bot: Introduction to RPA	Automation Anywhere Platform		
	VALUE ADDED COURSES – LSWR SKILLS			
S.No	Name of the Course	Mode of the Course- offered by the HEI or O	nline	
1	CAMBRIDGE CERTIFICATION ON ENGLISH EMPOWER	UNIVERSITY OF CAMBRIDGE		
2	PEARSON CERTIFICATION(LSWR SKILLS)	PEARSON-ME PRO		
3	OXFORD CERTIFICATION	UNIVERSITY OF OXFORD		
4	TCS ION CERTIFICATION ON "COMMUNICATION SKILLS"	TCS-ION PLATFORM		
5	TCS ION CERTIFICATION ON "EMAIL ETIQUETTE"	TCS-ION PLATFORM		
6	TCS ION CERTIFICATION ON "INTRODUCTION TO SOFT SKILLS"	TCS-ION PLATFORM		
	VALUE ADDED COURSES – E	EC COUNCIL		
S.NO.	Name of the Course			
1.	ETHICAL HACKING ESSENTIALS			
2	NETWORK DEFENCE ESSENTIALS			
3	SQL INJECTION ATTACKS			

#### h) Student's Chapter Activities:

Our institution hosts several student chapters, such as the Computer Society of India (CSI), which focuses on building technical and professional skills among students. Through workshops and seminars on trending technologies like AI and blockchain, CSI offers hands-on learning and insight into modern advancements. It organizes coding competitions, hackathons, and technical paper presentations to cultivate problem-solving skills, research capabilities, and innovation. Additionally, CSI arranges guest lectures and webinars where industry experts provide career advice and discuss current tech trends. Students also get to showcase their projects in expos, promoting creativity and practical knowledge.

Similarly, the Indian Society for Technical Education (ISTE) chapter aims to enhance technical education by conducting faculty and student development programs that align academic learning with industry needs. ISTE hosts technical competitions, conferences, and symposia on educational innovation. Skill-building workshops in leadership, communication, and entrepreneurship further prepare students for professional success. Their community outreach initiatives engage students in socially impactful projects, encouraging responsibility and service.

Our IEEE chapter organizes workshops on emerging fields like IoT and robotics, and hosts conferences where students can present their work, gain exposure, and network with peers and experts. IEEE also provides mentorship opportunities, linking students with professionals from academia and industry to support career growth. Each year, major events such as MEDHA and FUTURE SASTRA showcase these chapter activities, fostering a dynamic learning environment that enhances students' academic and professional journeys.





#### 6. EXPERIMENTAL LEARNING

#### a) Industrial Visits

The purpose of industry visits is to provide students with firsthand insight into the practices, technologies, and culture of the IT sector. Each year, third-year students have the opportunity to visit industries, gaining exposure to real-world operations and professional environments. This experience equips them with practical knowledge that complements their academic learning.

Moreover, these industry-institute interactions not only benefit students but also help faculty stay informed about the latest technological advancements and trends across various fields. This ensures that both the curriculum and teaching methods remain relevant to the evolving demands of the industry.





NRSC OUTREACH FACILITY – JEEDIMETLA



NRSC OUTREACH FACILITY – JEEDIMETLA



# b) Learning by Doing:

The Learning by Doing methodology enables faculty to train students through hands-on experiences using state-of-the-art equipment in laboratories. Each student is required to spend a minimum of 96 hours in the laboratory during an academic year, gaining practical exposure to complement their

theoretical knowledge. The research facilities and training details for each lab are outlined in the table below:

ADEQUATE AND WELL-EQUIPPED LABORATORIES			
<b>S.</b>	Name of the	<b>Equipment Details</b>	Utilization details from
No.	Laboratory		the perspective of PO
			attainment
1	DATA	Dell	Week1:
	STRUCTURES &	12 <sup>th</sup> Generation intel i5	Write C programs to implement recursive and
	ALGORITHMS	Processor	non-recursive.
	LAB	16 GB RAM	i) Linear Search
		256 Gb SSD	ii) Binary Search.
		20" Full HD Monitor	Week2:
			Write C programs to implement
			i) Bubble sort
			ii) Selection sort
			iii) Quick sort
			iv) Insertion sort
			Week3:
			Write C programs to implement the following
			using an array.
			a) Stack ADT
			b) Oueue ADT
			Week4:
			Write C programs to implement list ADT to
			perform following operations
			a) Insert an element into a list
			b) Delete an element from list
			c) Search for a key element in list
			d) count number of nodes in list
			Week5:
			Write C programs to implement the following
			where c programs to implement the following
			a) Stack ADT
			a) Stack ADT
			b) Queue ADT.
			Week6:
			Write C programs to implement the Deque
			(double ended queue) ADT using a doubly linked
			list and an array.
			Week7:
			Write a C program to perform the following
			operations:
			a) Insert an element into a binary search tree.
			b) Delete an element from a binary search tree.
			c) Search for a key element in a binary search

# Laboraties List for Learning by Doing

			tree.
			Week 8:
			Write C programs for implementing the following
			sorting methods:
			a) Merge sort
			b) Heap sort
			Week 9.
			Write C programs that use recursive functions to
			traverse the given binery tree in
			a) Dreamden
			a) Preorder
			b) in-order
			c) post-order.
			Week 10:
			Write a C program to perform the following
			operations
			a) Insertion into a B-tree
			b) Deletion from a B-tree
			Week 11:
			Write a C program to perform the following
			operation
			a) Insertion into an AVL-tree
			Week 12: Write a C program to implement all the
			functions of a dictionary (ADT) using hashing.
			PO1. PO2. PO3. PO4. PSO1. PSO3
2	OPER ATING	Dell	Week 1: Simulate the following CPU scheduling
_	SYSTEMS LAB	12 <sup>th</sup> Generation intel i5	algorithms. a) Round Robin b) SJF c) FCFS d)
		Processor	Priority.
		16 GB RAM	Week 2: Simulate all file allocation strategies a)
		256 Gh SSD	Sequential b) Indexed c) Linked. Week 3:
		200 CU SSD	Simulate MVT and MFT.
		20 Full HD Monitor	Week 4: Write a C program to simulate the
			following contiguous memory allocation
			Verse Simulate all File Organization
			Techniques a) Single level directory b) Two level
			c) Hierarchical d) DAG
			Week 6: Simulate Bankers Algorithm for Dead
			Lock Avoidance.
			Week 7: Simulate Bankers Algorithm for Dead
			Lock Prevention.
			Week 8: Write a C program to simulate disk
			scheduling algorithms. a) FCFS b) SCAN c) C-
			SCAN
			Week 9: Simulate all page replacement
			algorithms a) FIFU b) LKU c) LFU Wook 10. Simulate Desing Technisms of many stress
	1		week IU: Simulate Paging Technique of memory
1			management
			management. Week11: Write a C program to simulate
			management. Week11: Write a C program to simulate producer-consumer problem using semaphores.

			concept of Dining-philosophers problem.
			PO1. PO2, PO3, PO4, PO5, PO12, PSO1, PSO2
3	PROGRAMMING	Dell	Week 1:
	THROUGH JAVA	12 <sup>th</sup> Generation intel i5	a) Write a java program to find the Fibonacci
	LAB	Processor	series using recursive and non-recursive
		16 GB RAM	functions.
		256 Gb SSD	b) Write a java program to multiply two given
		20" Ex11 LID Manitan	matrices.
		20 Full HD Monitor	Week 2:
			a) Write a java program for Method overloading
			and Constructor overloading.
			b) Write a java program to display the employee
			details using Scanner class. c) Write a java
			program that checks whether a given string is
			paindrome or not.
			Week 3:
			class with example.
			b) Write a java program to implement Interface
			using extends keyword.
			Week 4:
			a) Write a java program to create user defined
			package.
			Week 5:
			a) write a java program to create inner classes.
			catch blocks
			c) Write a Java Program for creating User
			Defined Exception.
			Week 6:
			a) Write a java program for producer and
			consumer problem using Threads. b) Write a Java
			program that implements a multi-thread
			week 7.
			a) Write a jova program to implement all file
			a) write a java program to implement an me
			b) Write a Java Program to list all the files in a
			directory including the files present in all its sub
			directories.
			Week 8:
			a) Write a java program to represent Array List
			class.
			b) Write a Java program loads phone no, name
			from a text file using Hash table.
			Week 9:
			a) Write an applet program that displays a simple
			message.
			b) Write a Java program compute factorial value
			using Applet.
			c) Write a program for passing parameters using
			Applet.
			week IU: Write a java program for handling
			iviouse events and Key events.

			<b>Week 11:</b> Write a java program that works as a simple calculator. Use a Grid Layout arrange
			Buttons for digits and for the + *% operations
			Add a text field to display the result
			$P_{01} P_{02} P_{03} P_{04} P_{05} P_{01}$
1		Dell	F
4	MANAGEMENT	12 <sup>th</sup> Generation intel i5	E-R Model Analyse the problem carefully and
	SYSTEMS LAB	Processor	come up with the entities in it using software
		16 GB RAM	design tool. Identify what data has to be persisted
		256 Gb SSD	in the database. This contains the entities,
		20" Full HD Monitor	attributes etc. Identify the primary keys for all the entities. Identify the other keys like candidate
			keys, partial keys, if any.
			Example:
			Entities:
			1. BUS
			2. Ticket
			3. Passenger
			Relationships:
			1. Reservation
			2. Cancellation
			PRIMARY KEY ATTRIBUTES:
			1. Ticket ID (Ticket Entity)
			2. Passport ID (Passenger Entity)
			3. Bus NO (Bus Entity) Apart from the above-
			mentioned entities you can identify more. The
			above mentioned are few.
			Ex: Bus Entity
			Ex: Reservation relationship
			Note: The student is required to submit a
			document by writing the Entities and Keys to the
			lab teacher
			Experiment 2: Installation of My sql and
			practicing DDL, commands Installation of My
			Sql. In this week you will learn Creating
			databases, How to create tables, altering the
			database, dropping tables and databases if not
			required. You will also try truncate, rename
			commands etc. Example for creation of a
			normalized "Passenger" table. CREATE TABLE
			Passenger ( Passport_id INTEGER PRIMARY KEY Name VARCHAR(50) NotNULL
			AgeInteger Not NULL, Sex Char Address
			VARCHAR (50) Not NULL). Similarly create all
			other tables. Note: Detailed creation of tables is
			given at the end Experiment 3. Practicing DMI
			commands DML commands are used to for
			managing data within schema objects. Some
			examples: $\Box$ SELECT - retrieve data from the
			adatabase $\square$ INSERT - insert data into a table
			$\Box$ UPDATE - undates existing data within a table
			$\Box$ DELETE - deletes all records from a table, the
			space for the records remain
L			

	<ul> <li>Inserting values into "Bus" table: Insert into Bus values (1234,'hyderabad', 'tirupathi'); Insert into Bus values (2345,'hyderabd', 'Banglore'); Insert into Bus values (23,'hyderabd','Kolkata'); Insert into Bus values (45,'Tirupathi,'Banglore'); Insert into Bus values (34,'hyderabd','Chennai');</li> <li>Inserting values into "Passenger" table:</li> <li>Insert into Passenger values (1, 45,'ramesh', 45,'M', 'abc123'); Insert into Passenger values (2, 78,'geetha', 36,'F','abc124'); Insert into Passenger</li> </ul>
	values (45, 90,' ram', 30,'M','abc12'); Insert into Passenger values (67, 89,' ravi', 50,'M','abc14'); Insert into Passenger values (56, 22,'seetha', 32,'F','abc55');
	□ Select * from Bus; (selects all the attributes and display) UPDATE BUS SET Bus No = 1 WHERE BUS NO=2;
	Experiment 4:
	Querying In this week you are going to practice queries (along with sub queries) using ANY, ALL, IN, Exists, NOT EXISTS, UNION, INTERSECT, Constraints etc.
	<ul> <li>Practice the following Queries:</li> <li>Display unique PNR_no of all Passengers.</li> <li>Display all the names of male passengers.</li> <li>Display the ticket numbers and names of all the</li> </ul>
	□ Find the ticket numbers of the passengers whose name start with 'r' and ends with 'h'. Find the names of passengers whose age is between 30 and 45.
	□ Display all the passengers names beginning with 'A' Display the sorted list of passenger's names
	Experiment 5:
	Aggregate Functions and Number Functions, Nested Query and Co-related Queries You are
	functions and number functions (COUNT, SUM, AVG and MAX and MIN) GROUP BY
	HAVING and Creation and dropping of Views. Write a Query to display the Information present
	in the Passenger and cancellation tables. Hint: Use UNION Operator.
	$\Box$ Display the number of days in a week on which the 9W01 bus is available. $\Box$ Find number
	of tickets booked for each PNR_no using GROUP BY CLAUSE. Hint: Use GROUP BY on
	PNR_No.Find the distinct PNR numbers that are present.  □ Find the number of tickets booked by a
	passenger where the number of seats is greater than 1.Hint: Use GROUP BY, WHERE and

	HAVINGCLAUSES.  Find the total number of
	cancelled seats. $\Box$ Nested Query and Co-related
	Queries Use the tables sailors, reserves, boats for
	implementing the following Sailors (sid: integer,
	sname: string, rating: integer, age: real);
	Boats(bid: integer, bname: string, color: string);
	Reserves(sid: integer, bid: integer, day: date).
	Find the names of sailors who have
	reservedboat $103 \square$ Find the name and the age of
	the youngest sailor $\Box$ Find the names and ratings
	of sailor whose rating is better than some sailor
	called Horatio Find the names of sailors who
	have reserved all boats
	<b>Experiment 6:</b> VIEWS and JOIN In this week,
	we are going to implement views and also
	perform various operations like alter, update and
	delete commands. □ View: Write a query to
	execute and verify the SQL commands using
	Views (Use Employee Table)□ (a) Alter (b)
	Update (c) Delete Join: Write a query to execute
	and verify the SQL commands using Join (Use
	Customer Table) (a) Inner join, (b).Left join,
	(c).Right join (d).Full join
	<b>Experiment 7</b> : Triggers In this week you are
	going to work on Triggers. Creation of insert
	trigger, delete trigger, update trigger. Practice
	triggers using the above database. $\Box$ Eg: CREATE
	TRIGGER up d check BEFORE UPDATE ON
	passenger FOR EACH ROW BEGIN□ IF NEW.
	Tickent N0 > 60 THEN SET $\Box$ New. Tickent no =
	Ticket no; ELSE SET New. Ticket no = 0; END
	$IF; \sqcup END;$
	<b>Experiment 8:</b> Procedures in this session you are
	going to learn Creation of stored procedure,
	Execution of procedure and modification of
	database $\square$
	Eq: CREATE PROCEDURE myProc $\cap$ BEGIN $\Box$
	SELECT COUNT(Tickets) FROM Ticket
	WHERE age>=40: End: $\Box$ Experiment 9:
	Cursors In this week you need to do the
	following: Declare a cursor that defines a result
	set. $\Box$ Open the cursor to establish the result set.
	Fetch the data into local variables as needed from
	the cursor, one row at a time. Close the cursor
	when done.  CREATE PROCEDURE myProc
	(in_customer_id INT) BEGIN DECLARE v_id
	INT; DECLARE v_name VARCHAR(30);□
	DECLARE clCURSOR FOR
	SELECTppno,name FROMPassengerWHERE
	ppno=in_customer_id; OPENcl; $\Box$ FETCH cl $\Box$
	into v_id, v_name; Close cl; END Tables BUS
	Bus No: Varchar:
	Varchar Destination: Varchar DeptTime:

	Varchar Passenger PPNO: Varchar(15)) :□ PK
	Name: $\Box$ Varchar(15) Age : int (4) Sex: Char( I 0)
	: Male/Female Address: VarChar(20)
	Passenger Tickets  PPNO: Varchar(15)) : FK
	Ticket No: Numeric (9) $\square$ Reservation $\square$
	PNR No: Numeric(9) $\Box$ PK Journey date
	datetime(8) No. of seats : int (8) Address:
	Varchar(50) Contact No: Numeric (0)
	Should not be less then 0 and Should not account
	Should not be less than 9 and Should not accept
	any other character other than integer status: $Chan (2) = Var / Na \square Canaellation \square$
	Char (2): Yes / No $\square$ Cancellation $\square$
	$PNR_No:Numeric(9): \square FK$
	Journey_date:datetime (8) No_of_seats : int (8)
	Address : Varchar (50) Contact_No: Numeric
	$(9) \longrightarrow$ Should not be less than 9 and should not
	accept any other character other than Integer $\Box$
	Status: Char (2) : Yes / No $\Box$ Ticket $\Box$ Ticket_No:
	Numeric(9): PK Journey_date :datetime(8) Age
	: int (4)Sex:Char(10) :Male/Female Source
	:Varchar Destination :Varchar Dep time :Varchar
	Experiment 10:
	Normalization
	□ Database normalization is a technique for
	designing relational database tables to minimize
	duplication of information and, in so doing, to
	safeguard the database against certain types of
	logical or structural problems, namely data
	anomalies
	For example, when multiple instances of a given
	niece of information occur in a table, the
	possibility exists that these instances will not be
	kept consistent when the date within the table is
	Rept consistent when the data within the table is
	A table that is sufficiently normalized is less
	A table that is sufficiently normalized is less
	vulnerable to problems of this kind, because its
	structure reflects the basic assumptions for when
	multiple instances of the same information should
	be represented by a single instance only.
	$\Box$ For the above table in the First normalization
	we can remove the multi valued attribute
	Ticket_id and place it in another table along with
	the primary key of passenger.
	□ First Normal Form: The above table can be
	divided into two tables as shown below.
	Passenger
	Name Age Sex Address PassportID
	Passport_id Ticket_id
	$\Box$ You can do these second and third normal
	forms if required. And how Normalize d tables
	are given at the end.
	Experiment 11: PL/SQL Programs
	□ In this week, you are going to learn and work
	on PL/SQL procedures.
	□ Write a PL/SQL procedure to find the average

			of marks?
			$\Box$ Write a PL/SQL procedure to find the factorial
			of a number?
			Write a PL/SQL code to calculate tax for all
			his/har name & tay, by greating table under
			employee database as below
			Employee salarvEmp no Basic HRA DA
			Net salary Total deduction
			Gross salary
			Experiment 12:
			Revoke/Grant/Commit/Rollback
			$\Box$ In this week, you need to do the following:
			Declare a table that defines a result set using
			revoke, grant, save point, commit, rollback
			operations
			Consider the following tables namely
			"DEPARTMENTS" and "EMPLOYEES" Their
			dent name dent location ): Employees (
			emp_id_emp_name_emp_salary):
			emp_ra, emp_name, emp_sarary ),
			1.Develop a query to grant all privileges of
			employees table into department stable
			2. Develop a query to grant some privileges of
			employees table into department stable
			3. Develop a query to revoke all privileges of
			employees table from department stable
			4. Develop a query to revoke some privileges of
			employees table from department stable
			5. Write a query to implement the save point
			6. Write a query to implement the commit
			7. Write a query to implement rollback.
			PO1, PO2, PO3, PO4, PO10, PO12, PSO1
5	DESIGN AND	Dell	List of Experiments
	ANALYSIS OF	12 <sup>th</sup> Generation intel i5	· ·
	ALGORITHMS	Processor	1. Write a java program to implement Quick sort
	LAB	16 GB RAM	algorithm for sorting a list of integers in
		256 Gb SSD	ascending order
		20" Full HD Monitor	2. White a joya magnam to implement Manga gont
			2. Write a Java program to implement Merge sort algorithm for sorting a list of integers in
			ascending order.
			6
			3. Write a java program to implement the dfs
			algorithm for a graph.

			4. Write a. java program to implement the bfs algorithm for a graph.
			5. Write a java programs to implement backtracking algorithm for the N-queens problem.
			6. Write a java program to implement the backtracking algorithm for the sum of subsets problem.
			7. Write a java program to implement the backtracking algorithm for the Hamiltonian Circuits problem.
			8. Write a java program to implement greedy algorithm for job sequencing with deadlines.
			9. Write a java program to implement Dijkstra's algorithm for the Single source shortest path problem.
			10. Write a java program that implements Prim's algorithm to generate minimum cost spanning tree.
			11. Write a java program that implements Kruskal's algorithm to generate minimum cost spanning tree
			12. Write a java program to implement Floyd's algorithm for the all pairs shortest path problem.
			13. Write a java program to implement Dynamic Programming algorithm for the 0/1 Knapsack problem.
6	COMPUTER NETWORKS LAB	Dell 12 <sup>th</sup> Generation intel i5 Processor 16 GB RAM	<ul> <li>PO1, PO2, PO3, PO4, PO5, PO9, PO10, PO11, PSO1, PSO2</li> <li>Computer Networks Lab: <ol> <li>Implement the data link layer framing methods such as character, character stuffing, and bit stuffing.</li> </ol> </li> </ul>
		256 Gb SSD 20" Full HD Monitor	2. Implement on a data set of characters the three CRC polynomials – CRC 12, CRC 16 and CRC.
			3. Implement Stop and wait protocol.
			4. Implement Dijkstra's algorithm to compute the Shortest path through a graph.
			5. Take an example subnet graph with weights indicating delay between nodes. Now obtain

			Routing table art each node using distance vector
			6. To implement Open Shortest Path First (OSPF) Routing Protocol
			7. Take a 64 bit playing text and encrypt the same using DES algorithm
			8 Using RSA algorithm encrypts a text data and
			Decrypt the same.
			PO1, PO2, PO3, PO4, PO5, PO9, PO12, PSO1, PSO2, PSO3
7	DATA	Dell	UNIT-1.
	AND DATA	12 <sup>cm</sup> Generation intel 15	Build Data Warehouse/Data Mart (using open
	MINING LAB	Processor	source tools like Pentaho Data Integration tool,
		10 GB KAM	Pentoaho Business Analytics; or other data
		200 UU SSD	warehouse tools like Microsoft-SSIS,
		20 Tull IID Mollitor	Informatica, Business Objects, etc.). Identify
			multi-dimensional data models namely Star.
			snowflake and Fact constellation schemas for any
			one enterprise (ex. Banking, Insurance, Finance,
			Healthcare, Manufacturing, Automobile, etc.).
			Write ETL scripts and implement using data
			warehouse tools Perform various CLAP
			operations such slice, dice, roll up, drill up and nivet Explore visualization features of the tool for
			analysis like identifying trends etc. B. Explore
			WEKA Data Mining/Machine Learning Toolkit
			Downloading and/or installation of WEKA data
			mining toolkit, Understand the features of WEKA
			toolkit such as Explorer, Knowledge Flow
			interface, Experimenter, command- line interface.
			Navigate the options available in the WEKA (ex.
			Select attributes panel, Preprocess panel, Classify
			Visualize panel) Study the arff file format Explore
			the available data sets in WEKA. Load a data set
			(ex. Weather dataset, Iris dataset, etc.) Load each
			dataset and observe the following List the
			attribute names and they types Number of records
			in each dataset Identify the class attribute (if any)
			Plot Histogram Determine the number of records
			for each class. Visualize the data in various
			UNIT 2
			Perform data preprocessing tasks and
			Demonstrate performing association rule mining
			on data sets A.Explore various options available
			in Weka for pre-processing data and apply (like
			DiscretizatiOfl Filters, Resample filter, etc.) on

each dataset B.Load each dataset into Weka and run Apron algorithm with different support and confidence values. Study the rules generated. C. Apply different discretization filters on numerical attributes and run the Apriori association rule algorithm. Study the rules generated. Derive interesting insights and observe the effect of discretization in the rule generation process. <b>UNIT 3</b> Demonstrate performing classification on datasets A. Load each dataset into Weka and run 1d3, J48 classification algorithm. Study the classifier output. Compute entropy values, Kappastatistic. B. Extract if-then rules from the decision tree generated by the classifier, observe the confusion matrix and derive Accuracy, F-measure, TPrate, FPrate, Precision and Recall values. Apply cross- validation strategy with various fold levels and compare the accuracy results. C. Load each dataset into Weka and perform Naïve-bayes classification. Interpret the results obtained. D. Plot RoCCurves E. Compare classification results of 1D3, J48, Naïve-Bayes and k-NN classifiers for each dataset and deduce which classifier is
performing best and poor for each dataset and justify.
<ul> <li>UNIT 4</li> <li>Demonstrate performing clustering Ofl data sets</li> <li>A. Load each dataset into Weka and run simple k- means clustering algorithm with different values of k (number of desired clusters). Study the clusters formed. Observe the sum of squared errors and centroids and derive insights.</li> <li>B. Explore other clustering techniques available in Weka.</li> <li>C. Explore visualization features of Weka to visualize the clusters. Derive interesting insights and explain.</li> <li>UNIT 5</li> <li>Demonstrate performing Regression on data sets.</li> <li>A. Load each dataset into Weka and build Linear Regression model. Study the clusters formed. Use Training set option. Interpret the regression model and derive patterns and conclusions from the regression results.</li> <li>B. Use options cross-validation and Percentage split and repeat running the Linear Regression Model. Observe the results and derive meaningful results. Explore Simple linear regression technique that only looks at one variable. PO1, PO2, PO3, PO4, PO5, PSO1, PSO2</li> </ul>

8	WEB	Dell	1. Install the following on the local machine
	TECHNOLOGIES	12 <sup>th</sup> Generation intel i5	Apache Web Server (if not installed)
	LAB	Discourse and the second secon	Tomcat Application Server locally Install
		Processor	MariaDB (formerly called as MySOL if not
		16 GB RAM	installed)
		256 Gb SSD	
		20" Full HD Monitor	Install PHP and configure it to work with Apache
		20 Full HD Mollitor	web server and MySQL (if not already
			configured)
			2. Design a simple online shopping website with
			different web pages. (Note: Use frames,
			hyperlinks, Images, tables etc)
			3. Re-design the above the website applying CSS.
			4. Design login page, registration page and apply
			the client-side validations using JavaScript.
			5 1
			5. Create an XML document that contains 10
			user's information Write a Java program which
			takes User Id as input and returns the user details
			by taking the user information from the XMI
			document using
			(a) DOM Parser and
			(a) DOW I also and (b) SAX parsor Implement the following web
			(b) SAX parser implement the following web
			applications using
			(a) PHP,
			(b) Serviets and
			6. A user validation web application, where the
			user submits the login name and password to the
			server. The name and password are checked
			against the data already available in Database and
			if the data matches, a successful login page is
			returned. Otherwise a failure message is shown to
			the user.
			7. Modify the above program to use AJAX to
			show the result on the same page below the
			submit button.
			8. A simple calculator web application that takes
			two numbers and an operator (+, -, /, * and %)
			from an HTML page and returns the result page
			with the operation performed on the operands.
			9. A web application takes a name as input and
			on submit it shows a hello <name> page where</name>
			<name> is taken from the request. It shows the</name>
			start time at the right top corner of the page and
			provides a logout button. On clicking this button
			it should show a logout page with Thank You
			<name> message with the duration of usage (hint:</name>
			Use session to store name and time)
			10 A web application that takes name and age
			from an HTML page. If the age is less than 10 it
			should cond a mage with "Italia (mark) and a mage with "Italia (mark)
			snould send a page with "Hello <name>, you are</name>

			not authoriz <name> shi name. Other <name> to 11. A web a user is first name and p the server of from a data decisions. If a welcome matches an "password in the databuser's full r full name, if</name></name>	zed to visit t ould be repla- rwise it show this site" me application for served a log assword. Af thecks these base and tak f name and j page with us d password of mismatch" p oase, serves a name is aske t stores, the	his site" messag aced with the en- uld send "Welco essage. for implementation in page which ta ter submitting the values against the res the following password matches ser's full name. If doesn't match, the page If name is no a registration page d and on submitt login name, pass	e, where tered me on: The akes user's ne details, ne data g es, serves f name nen serves not found ge, where ting the sword and
			full name in storing the	n the databas submitted lo	se (hint: use sess	ion for assword)
			12. A web a in the brow Add cookie PO1, PO2, PSO3	application the ser on clicki ser if necessar PO3, PO4, I	hat lists all cook ng "List Cookie ry. PO5, PO12, PSC	ies stored s" button. 01, PSO2,
9	MACHINE	Dell	EXPERIM	IENTS		
	LEARNING LAB	12 <sup>th</sup> Generation intel i5 Processor 16 GB RAM 256 Gb SSD 20" Full HD Monitor	1. The prob student is a days in a w 20 %. Wha absent give rule in pyth	bability that is bsent is 3 % eek, the proba t is the proba n that today on to get the	t is Friday and t . Since there are bability that it is ability that a stud is Friday? Apply e result. (Ans:15	hat a 5 school Friday is dent is y Baye's %)
			<ol> <li>Extract t</li> <li>Impleme using pythc</li> </ol>	he data from nt k-nearest	database using neigh bours clas	python ssification
			4. Given th classification and VAR2	e following ons for nine predict a cla	data, which spec combinations of ssification for a	offy VAR1 case
			result of k- 3centroids)	means cluste	ering with 3 mea	ns (i.e.,
			VAR1	VAR2	CLASS	
			1.713	1.586	0	
			0.180	1.786	1	
			0.353	1.240	1	
			0.940	1.566	0	
			1.486	0.759	1	
			1.200	0.410	1	
			0.459	1 799	1	
			0.773	0.186	1	
			5. The follo	wing trainir	ng examples map	)

			<ul> <li>descriptions of individuals onto high, medium and low credit - worthiness. medium skiing design single.</li> <li>&gt;highRiskhigh golf twenties no trading married forties yes -&gt;lowRisk low speedway transport married thirties yes &gt;medRisk medium footballbanking single yes -&gt;lowRisk high flying media married thirties fifties yes -&gt;highRisk low footballsecurity single twenties no -&gt;medRisk medium golf media single thirties yes -</li> <li>&gt;medRisk medium golf transport married forties yes &gt;lowRisk high skiing banking single thirties yes -&gt;highRisk low golf unemployed married forties yes -&gt;highRisk low golf unemployed married forties yes -&gt;highRisk low golf and the conditional probability of `golf' and the conditional probability of `single' given `medRisk' in the dataset?</li> <li>6. Implement linear regression using python.</li> <li>7. Implement Naïve Bayes theorem to classify the English text</li> <li>8. Implement an algorithm to demonstrate the significance of genetic algorithm</li> </ul>
			9. Implement the finite words classification system using Back-propagation algorithm. PO1,PO2, PO3, PO4, PO5, PO12, PSO1,PSO2.PSO3
10	MOBILE APPLICATION DEVELOPMENT	Dell 12 <sup>th</sup> Generation intel i5 Processor 16 GB RAM 256 Gb SSD 20" Full HD Monitor	<ul> <li>EXPERIMENTS: <ol> <li>Installation of Java Wireless Toolkit (J2ME)</li> <li>Development Of Hello World Application</li> <li>Development of Menu Creation Application</li> <li>Generation of Menu Events Handling Application</li> <li>Development of Slide Show Application</li> <li>Generation of Image Slide Show</li> <li>Development of Quiz &amp; amp; RMS Application</li> <li>Application for Input Checking</li> <li>Generation of Bar Graph</li> </ol> </li></ul>

	10. Generation of Pie Chart
	11. Client Server App using Datagram
	12. Login using Http Connection
	PO1, PO2, PO3, PO4, PO5, PO6, PO12, PSO1, PSO2, PSO3

## c) Story Board/Concept Canvas

Storyboard/Concept Canvas is a visual representation in the form of images, block diagrams or illustrations displayed for the purpose of pre-visualizing the concepts of the laboratory experiments in a single real-time application. This is presented to the students before conducting practical experiments in the laboratory to create enthusiasm among them. The sample story board for Network Security Laboratory is displayed in the figure given below:

# d) INNOVATIVE PRODUCT DEVELOPMENT

Innovative Product Development focuses on transforming creative ideas into products through a structured and collaborative process. It encompasses research, design, prototyping, testing, and refining to meet user needs and ensure functionality, feasibility, and appeal. This process requires a blend of technical skills, creativity, and business acumen to successfully take an idea from concept to reality.

Our institute emphasizes hands-on experience in product development, encouraging students to tackle real-world problems with innovative solutions. Students engage (a team of 4 members) in every phase of the development cycle, from identifying user requirements and research gaps to creating prototypes and conducting usability tests. Through interdisciplinary collaboration, students gain insights into various aspects of product development, such as engineering design, user experience, sustainability, and commercialization strategies. Innovative Product Development begins in Semester III, with each IPD carrying 1 credit. Evaluation can be conducted by industry experts.

S.NO.	SEMESTER	EXEED MODULE	CREDITS
1	III	INNOVATIVE PRODUCT DEVELOPMENT-1	1
2	IV	INNOVATIVE PRODUCT DEVELOPMENT-2	1
3	V	INNOVATIVE PRODUCT DEVELOPMENT-3	1
4	VI	INNOVATIVE PRODUCT DEVELOPMENT-4	1
5	VII	INNOVATIVE PRODUCT DEVELOPMENT-5	1
6	VII	INNOVATIVE PRODUCT DEVELOPMENT-6	1



Our Honourable Chairman sir, Sri. Ch. Malla Reddy Sir, - Visited Innovative Product Development Exhibition



Innovative Product Development – Evaluated by Industry Expert

Sno	Roll number	Student Name	Name of the Idea	Description of the Idea	Working Model
1	21RH1A121 3 21RH1A121 4 21RH1A121 5	B.RAKSHITH A B.ANKITHA B. LAXMIPRASA NNA	CLASSIFI CATION OF ARRHYTH MIA USING DEEP LEARNIN G	Deep learning techniques have become increasingly effective for classifying arrhythmias from electrocardiogram (ECG) signals. The process typically begins with collecting ECG data, often from publicly available datasets like the MIT- BIH Arrhythmia Database. The raw ECG signals are then preprocessed to remove noise, normalize the data, and segment it into manageable windows for analysis. Instead of relying on manual feature	Lectrocardiodiagram Deep Learning Deep Learning Arrhythmia Sinus Arrial Arrhythmia Sinus Arrial Diagnosis rhythm fibriliation Deep Learning Deep Lear

				extraction, deep learning models	
2	21RH1A129 0 21RH1A129 2 21RH1A12A 8	K.KEERTHI K.SREEJA K.VAISHNAV I	ZERO WASTAGE - RECYCLI NG APP	A Zero Wastage-Recycling App is designed to promote sustainable living by helping users reduce, reuse, and recycle their waste more effectively. The app provides a platform for users to easily identify and separate recyclable materials, offering information on local recycling centers, collection schedules, and waste disposal guidelines. It may include features such as barcode scanning to help users identify recyclable items, tips for reducing waste at home or work, and the option to track personal recycling progress.	ZERO WASTE
3	21RH1A120 3 21RH1A122 9 22RH5A120 2 21RHIA123 2	A.LAKSHMI VYSHNAVI B.DEEPIKA B.LAXMI B.SUPRIYA NAIK	BLOCK CHAIN FOR THE MANAGE MENT OF INTERNET OF THINGS DEVICES IN THE MEDICAL INDUSTR Y	Blockchain technology, known for its secure, transparent, and decentralized nature, is increasingly being adopted in the Internet of Things (IoT) ecosystem, especially in the medical industry. The integration of IoT devices with blockchain can address critical challenges in healthcare such as data security, privacy, device management, and trust.	Medical Data Storage Medical Data Storage Healthcare Healthcare Biockchain
4	21RH1A123 9 21RH1A125 2	P.CARIS CH.LIPI	ILLUMINA TING AUTONO MY FEDERAT ED LEARNIN G	Federated Learning (FL) is a decentralized machine learning approach that allows multiple devices or organizations to collaboratively train a shared model without sharing their data. This approach is particularly useful for applications where data privacy, security, and autonomy are critical, such as in healthcare, finance, and	$\begin{array}{c} K \\ K $

				smart devices.	
	2101114 129			A <b>Campus Master</b> generally refers to a comprehensive <b>campus management system</b> designed to streamline and improve various administrative tasks	
5	21RH1A128 1 21RH1A12C 7 21RH1A127 3 21RH1A12C 5	J.AKANKSH A M.RAMYA SRI G.SINDHU M.NAVYA	CAMPUS MASTER	operations, and services within a university or educational institution. It integrates various functions such as student management, faculty management, scheduling, admissions, finances, and more into a single platform to increase efficiency and improve the overall educational experience.	
6	21RH1A127 8 21RH1A129 8 21RH1A127 9	H.UDAY SRI K.PREETHI J.SHIRISHA	ONLINE MULTIPLE PAYMENT SYSTEM	An <b>Online Multiple Payment</b> <b>System</b> is a payment gateway that allows users to pay for products or services using different payment methods through a single platform. This system integrates multiple payment options, providing flexibility and convenience for customers while enhancing business opportunities by supporting various payment methods.	Payment Payment Coding Coding Coding Witting Coding Witting Coding Coding Witting Codi
7	21RH1A12D 6 21RH1A12G 8 21RH1A12K 4	N.SREEJA S.BHANU SRI Y.GOUTHAM I	DATA MINDS	Data Minds typically refers to individuals, teams, or organizations that specialize in the field of data science, analytics, and data-driven decision-making. They are skilled in extracting insights from data and applying them to solve complex problems, optimize processes, or support business growth.	Delign Delign S Leadership



8	21RH1A12E 3 21RH1A12E 621RH1A12 F1 21RH1A12F 8	P.ASHRITHA P.SHIVANI P.GAYATHRI P.ASHRITHA	PARENT HOOK – A CHILD TRACKIN G SYSTEM BASED ON CLOUD URL	Parent Hook is a cloud-based child tracking system designed to ensure child safety. It uses GPS to provide real- time location updates of the child.Parents can access the child's location through a simple web URL. The system includes features like geofencing and emergency alerts for enhanced security. Data is securely stored on the cloud, ensuring accessibility and privacy for authorized users.	
9	22RH1A129 8 22RH1A129 9 22RH1A12A 0	K.SAI SIRI CHANDANA K.SHREYA L.VAISHNAV I	GRAPHIC AL PASSWOR D AUTHENT ICATION SYSTEM FOR WEB SECURITY	Graphical passwords involve selecting or drawing an image-based password rather than typing a string of characters. These passwords leverage visual memory and the human ability to recognize patterns in images, making them potentially more secure and user-friendly than text- based passwords.	Yeah Rand Complexit Pressed Authorithative System         France France Insure         France France Insure         Image: State System         Image: State System
10	22RH1A127 422RH1A12 75 22RH1A127 6	J.PUJITHA J.SHARANY A K.SWETHA	CLIENT SIDE DEFENCE AGAINST WEB SPOOFING ATTACKS PHISH CATCHER USING ML	Cyber security confronts a tremendous challenge of maintaining the confidentiality and integrity of user's private information such as password and PIN code. Billions of users are exposed daily to fake login pages requesting secret information. Web spoofing or phishing is an electronic trick in which the attacker constructs a malicious copy of a legitimate web page and request users' private information such as password.	

11	22RH1A126 1 22RH1A127 0 23RH5A120 8	G.TEJA SRI A.PRANEET HA M.SAI SINDHU	BLOCK CHAIN BASED E- VAULT FOR LEGAL RECORDS	A blockchain-based e-vault for legal records is a secure, decentralized digital storage solution designed to protect and manage sensitive legal documents, such as contracts, wills, deeds, and court rulings. By leveraging blockchain technology, the e-vault ensures that all records are encrypted, immutable, and tamper-proof, providing a high level of security and transparency. Each document stored in the e-vault is assigned a unique cryptographic hash, ensuring its authenticity and preventing unauthorized modifications.	
12	22RH1A124 9 22RH1A125 1 22RH1A125 8	CH.GAYATH RI D.SRUSHTI E.MANASA	ONLINE APPAREL SHOPPING USING DJANGO	Building an online apparel shopping platform using Django provides a robust and scalable solution for e- commerce websites. Django, a high-level Python web framework, offers powerful features like an integrated admin panel, user authentication, and a flexible ORM for database management, making it ideal for developing online stores. In such an application, users can browse through various categories of clothing, filter products by size, color, price, and brand, and view detailed product descriptions and images.	B-COMMERCE WEBSITE Cignogo Product detail view
13	22RH1A12F 8 22RH1A12G 5 22RH1A12G 7	S.DHANA VAISHNAVI NASIMA SHEROVAN KUMARI -	ARTIFICIA L NETWOR KS TO IDENTIFY FAKE PROFILES	Artificial Neural Networks (ANNs) are widely used in the detection of fake profiles, particularly on social media platforms and online services. These networks are a subset of machine learning and mimic the human brain's neural structure to learn and recognize patterns. Here's a brief overview of how ANNs can be used to identify fake profiles	

14	22R H1A12E3 22R H1A12J1 22R H1A12J2	P.VAISHNAVI V.SRUTHI SUSHUMNA	DEEP LEARNIN G APPROAC H FOR INTELLIG ENT INTRUSIO N DETECTIO N SYSTEM	An <b>Intrusion Detection</b> System (IDS) is crucial for identifying malicious activities or policy violations in a network. Traditional IDS methods, such as rule-based systems, often struggle with high complexity and evolving attack patterns. A <b>Deep</b> <b>Learning-based IDS</b> leverages neural networks to automatically learn patterns from large volumes of network data, offering a more adaptive and robust solution.	
15	23RH1A121 1 23RH1A120 7 23RH1A121 2	CH.RISHI TANMAI B.VYBHAVI CH.ASRITHA	ROBUST INTELLIG ENT MALWAR E DETECTIO N USING DEEP LEARNIN G	Robust intelligent malware detection using deep learning leverages advanced neural network models to automatically identify and classify malicious software by analyzing patterns in system behavior, network traffic, or files. Traditional malware detection methods often rely on signature-based approaches, which can be easily bypassed by new or modified malware. Deep learning, however, excels by learning complex features from raw data without relying on predefined signatures.	
16	23RH1A123 7 23RH1A125 9 23RH1A123 1	K.CHANDAN A SAHITHI T.GEETHA K.DHARVIKA	IMAGE FORGERY DETECTIO N BASED ON FUSION OF LEIGHT WEIGHT DEEP LEARNIN G MODELS	Image forgery detection based on the fusion of lightweight deep learning models aims to efficiently and accurately identify manipulated or altered images, which are increasingly used in cybercrime, misinformation, and digital forensics. Traditional deep learning models for image forensics often require high computational resources and large datasets, making them unsuitable for real-time applications or devices with limited processing power. However, by combining lightweight models	

#### 7. PROJECT BASED LEARNING

#### a) Internships/Industry Oriented Mini Projects

An internship is an opportunity to gain hands-on experience with the companies. Many of the internships leads to offer a fulltime job. It enhances not only the technical skills but also improves communication, teamwork and problem solving. Industry needs are known against the technical path. MRECW promotes internships for the benefit of students by fulfilling the academic curriculum.





# **b)** Research Projects

Integrating society-related projects into the curriculum aims to strengthen students' problemsolving abilities by tackling real-world challenges. These projects enable students to apply their theoretical knowledge in practical research, developing and showcasing pilot projects with potential for future growth and implementation.

As part of this process, students present their projects during a dedicated expo, where their work is evaluated by both internal and external examiners. This comprehensive assessment ensures that students receive valuable feedback from diverse perspectives, fostering continuous improvement and innovation in their work. These projects also encourage community engagement and can inspire solutions to societal issues.





S. NO	Roll No.	Name of the Student	Title	Supervisor Name		
		Student				
1.	20RH1A1232	B.Sai Sruthi				
	20RH1A1201	A.Manisha Kumari	Analytical Approach for Future Blockchain Forensic Investigation of	Dr. SUMAIYA SAMREEN		
	21RH5A1202	B.Vaishnavi	Bitcoin Transaction			
	21RH5A1204	204 CH. Chandana Priya				
2.	20RH1A1223	B.Nikitha				
	20RH1A1222	B.Anjali	Real-Time CCTV Video Analysis : Deep Learning	Dr. SUBBA REDDY BORRA		
	21RH5A1201	A.Sirichandana	for Weapon Detection			
	20RH1A1243	D.Harshitha	-			
3.	20RH1A1202	A.Akshaya	Innovative Multi-Feature			
	20RH1A1217	B.Sruthi	Based Weather Classification for	Mr. M.PREM CHENDER		
	20RH1A1228	B.Lavanya	Supervised Learning in Multiclass Environments			
	20RH1A1211	A.lohitha				
4.	20RH1A1219	B. Poojitha	Detecting Cyber Bullying			
	20RH1A1220	B.Ashwitha	Age of BigData :	Mr. AYUB BAIG		
	20RH1A1221	B. Pravallika	DeepLearning Approach			

	20RH1A1231	B. Sai siri				
5.	20RH1A1254	G.leha	An Innovative AI-Driven			
	20RH1A1259	G.Sweja	and Cloud-Based Platform for Farmers : Enabling			
	20RH1A1260	G.Swetha	Plant Disease	MIS.B.HAKIIHA LAKSHMI		
	20RH1A1249	GO. Ankitha	and Forecasting			
6.	20RH1A1252	G. Vaishnavi	Artificial Intelligence-			
	20RH1A1253	G. Sneha	driven Data Perception for Sustainable Smart Water			
	20RH1A1255	G. Sushma	Supply: Enhancing Ouality Risk Analysis	Mr.S.SUNIL KUMAR		
	20RH1A1203	A. Rohini	Enhancing Atmospheric Visibility in Satellite Images using Dehazing Methods	Mrs.B.DURGA BHAVANI		
7.	20RH1A1204	A. Sravika				
	20RH1A1206	A. Harini	An Innovative AI-Driven			
	20RH1A1254	G.leha	for Farmers : Enabling	Mrs.B.HARITHA LAKSHMI		
	20RH1A1259G.SwejaPlant DiseaseIdentification, Tracking, and Forecasting					
8.	20RH1A1207	Akshaya	Object Detection and			
	20RH1A1226	B. Swathi	Multi-class Classification	Mr PANII JAWAI KAR		
	20RH1A1229	B. Sraveena	Application of AI-enabled			
	20RH1A1233	B. Satya Sahithi	- Surveillance Camera			
9.	20RH1A1213	B.Samyuktha				
	20RH1A1224	B.Aishwarya	Network Traffic Analysis			
	20RH1A1237	CH.Hima Bindhu	Identification and Classification Using ML	Mr. J.DAVID LIVINGSTON		
	20RH1A1247	D.Sneha	-			
10	20RH1A1208	A.Srirupa				
	20RH1A1238	Ch.Kavya	Enhancement Through	Mr. K.KUMARA SWAMY		
	20RH1A1225	B.Sravya	Dehazing and Color Correction Techniques			
	21RH5A1239	Ch. Varshini				
11	20RH1A1278	K.Vyshnavi	Logistic Regression and	Mr. S.SUNIL KUMAR		

	20RH1A12B6	M. Pavana sri	Random Forest Classifier for Attack Detection in			
	21RH5A1209	K.Bharathi	IoT Sensor Data			
	21RH5A1212	N. Vyshnavi				
12	20RH1A1289	K. Harika	Even out System			
	20RH1A1291	K. Harika	Application Design for	Mrs. N.TEJA SRI		
	20RH1A1267	J. Harshini	Enhanced Dental Disease Diagnosis			
	20RH1A12B0	M. Spoorthi				
13	20RH1A12B5	MP Yeshswini	A			
	20RH1A12B4	MP Jahnavi	Networks for Edge and	Mrs. M SYAMALA SAI SREE		
	20RH1A1282	K Ruchitha	Fog Computing - Based Energy Prediction			
	20RH1A12B3	M Jaswitha				
14	20RH1A1268	J.Lavanya				
	20RH1A1290	K.Sathwika	Based on Head Detection	Mrs. N.BABY RANI		
	20RH1A12B2	M.Likhitha	Both Images and Videos			
	20RH1A12C0	N.Sowjanya				
15	20RH1A1286	K.Sreeja	Machine Learning Models			
	2ORH1A12A1	M.Sai Prasanna	for Prediction and Forecasting of CO2	Mrs. B. DURGA BHAVANI		
	20RH1A12A3	M.Tapasya	Emission with			
	20RH1A12A4	M.Priyanka	Exploratory Data Analysis			
16	19RH1A1206	A.VASAVI	PERSONALITY-AWARE			
	19RH1A1256	G.SRI HARSHINI	RECOMMENDATION			
	19RH1A1258	G.MAHA LAKSHMI	USER INTERESTS MINING AND BREAK-	Dr. SHANMUGA PRIYA Mr. K Kumara Swamy		
	19RH1A1260	G.SATHWIKA	TWEET BASED BOT DETECTION USING BIG DATA			
17	19RH1A1207	A.PRIYANKA				
	20RH5A1201	A.JYOTHSNA	TRAFFIC PREDICTION			
	19RH1A1229	CH.NUTHANA	FOR INTELLIGENT	Mrs. C.RASHMI		
	19RH1A1239	CH.SREE HARIKA	SYSTEM USING ML			

18	19RH1A1233	CH.CHANDANA				
	19RH1A1206	A.VASAVI	PERSONALITY-AWARE			
	19RH1A1256	G.SRI HARSHINI	RECOMMENDATION			
	19RH1A1258	G.MAHA LAKSHMI	SYSTEM BASED ON USER INTERESTS MINING AND BREAK- PATH DISCOVERY	Dr. SHANMUGA PRIYA		
19	19RH1A1238	CH.RUCHITHA	MACHINE LEARNING			
	19RH1A1226	B.GAYATHRI	FOR WEB VULNERABILITY			
	19RH1A1254	G.KAVYA	OF CROSS-SITE	Mrs. B.HARITHA LAKSHMI		
	19RH1A1251	G.SUPRAJA	REQUEST FORGERY HOUSE PRICE PREDICTION MODELING USING MACHINE LEARNING	Mr. P.DEVENDAR		
20	19RH1A1242	D.HARI PRIYA				
	19RH1A1246	E.RAVALIKA				
	19RH1A1212 B.PALLAVI		ON TWITTER DATA	Mr. S.SUNIL KUMAR		
	19RH1A1213	B.SHRUTHI				
21	20RH5A1205	T.ROHINI				
	19RH1A1238	CH.RUCHITHA	MACHINE LEARNING			
	19RH1A1226	B.GAYATHRI	VULNERABILITY	Mrs. B.HARITHA LAKSHMI		
	19RH1A1254	G.KAVYA	OF CROSS-SITE REQUEST FORGERY			
22	19RH1A1275	K.VYBHAVI	SUICIDAL TENDENCY			
	19RH1A1278	K.HIMA SREE	COMPARATIVE STUDY	Mr. S.SUNIL KUMAR		
	19RH1A1282	K.SRILEKHA	OF MACHINE LEARNING	Mr. J.DAVID LIVINGSTEN		
	19RH1A1285	K.VAISHNAVI RANI	DETECTION IN BLOCK CHAIN			
23	19RH1A1266	J.CHARISHMA				
·	19RH1A1299	M.KAVYA	PREDICTING THE RICE			
	19RH1A1269	K.SAI MAHIMA	LEAF DISEASES USING	Dr. B. SUBBA REDDY		
	19RH1A12A5	M.PREETHI	CNN(DEEP LEARNING)			
24	19RH1A12A6	M.SUPRAJA				
	19RH1A1275	K.VYBHAVI	SUICIDAL TENDENCY	Mr. S.SUNIL KUMAR		

	19RH1A1278	K.HIMA SREE	DETECTION	
	19RH1A1282	K.SRILEKHA		
25	19RH1A12F4	K.RITIKA	DEEP LEARNING	
	19RH1A12C5	N.DEEKSHITHA REDDY	APPROACH FOR INTELLIGENT INTRUSION DETECTION	Mrs. B.HARITHA LAKSHMI
	19RH1A12C6	N.AKSHAYA REDDY	SYSTEM	
26	19RH1A12E5	R.MAHALAXMI	DRG-NET: DIABETIC	
	19RH1A12D5	P.SWETCHA	USING GENERATIVE	Dr. SHANMUGA PRIYA
	19RH1A12G5	S.ALEKHYA	ADVERSARIAL NETWORKS	
27	18RH1A1203	A. Monikasai		
	18RH1A1212	D.Anusha	PAINT ORIENTED	Dr. AR.Sivakumaran
	18RH1A1213	D.Gowri	DIGIT RECOGNITION	
		Nikhitha		
28	17RH1A1237	Nimisha Girathe	SEGMENTATION OF	
	18RH1A1254	Sai Tharuni	DETECTION BY USING	Dr. Jayarajan
	16RH1A1220	E.Keerthi	CNN ALGORITHM	
29	18RH1A1244	P.Sanjana	HUMAN COMPUTER	
	18RH1A1251	S.Bhargavi	INTERACTION BASED ONHEAD CONTRLED	K. Swetha Sastry
	18RH1A1253	T.keerthi	MOUSE	
30	18RH1A1248	k. Sahithi	A PRACTICAL ANIMAL	
	18RH1A1241	N. Sai Sharanya	COLLISION	C Anitha
	18RH1A1207	Ch. Lakshana	AVOIDANCE USING COMPUTER VISION TECHINQUES	G, Anttha
31	18RH1A1201	A. Samhitha	CYBER BOOLEAN	
	18RH1A1226	K. Sai Priya	SOCIAL MEDIA USING	
	18RH1A1236	M. Sai Harshitha	BIG DATA BY IMPELMENTING MACHINE LEARNING ALGORITHMS	Dr. M. Dileep Kumar
32	18RH1A1235	M.Srilaxmi	A REVIEW OF	
	18RH1A1233	K.Nikitha	OPINION DEDICTION DAGED	Dr. Jayarajan
	18RH1A1219	G.jyothika	ON MACHINE	

	LEARNING	

# 8.PROBLEM SOLVING METHODOLOGIES:

## a) Assignments:

Assignments play a crucial role in education as they contribute to the overall learning process and student development. Here's why they are important:

- Assignments help reinforce what is taught in the classroom by requiring students to apply the concepts independently.
- They encourage revision and deepen understanding of the subject.
- Assignments require analysing and solving problems, improving critical and analytical thinking.
- Students learn how to gather, analyse, and synthesize information.
- Completing assignments on deadlines teaches students to manage their time effectively.
- Teachers use assignments to evaluate a student's understanding of the topic.
- Feedback on assignments helps students identify their strengths and areas for improvement.
- Assignments act as a form of self-study, preparing students for exams by familiarizing them with potential questions and scenarios.
- Many assignments involve real-world problems, helping students understand how theoretical knowledge is applied practically.
- Assignments promote independent learning, allowing students to take responsibility for their education.
- Creative assignments encourage innovation and originality, enhancing a student's ability to think outside the box.

# **b) TUTORIALS**

Tutorials are an essential aspect of the learning process, complementing traditional lectures and self-study. They provide a focused, interactive, and practical learning experience. Here's why tutorials are important:

- Tutorials help clarify and reinforce the concepts taught in lectures.
- They provide opportunities to delve deeper into complex topics and resolve doubts
- Tutorials encourage active participation, enabling students to engage in discussions, ask questions, and share ideas.
- Interactive sessions help cater to diverse learning styles and improve retention of knowledge.
- Tutorials often involve smaller groups, allowing instructors to address individual needs.
- They provide a platform for personalized guidance, helping students overcome specific challenges.

- **Problem-Solving Skills:** Tutorials often focus on practical exercises, encouraging analytical and critical thinking.
- Collaboration: Group activities foster teamwork and communication skills.
- Application of Knowledge: Tutorials often emphasize the practical application of theoretical concepts.
- Tutorials allow students to apply theoretical knowledge to real-world problems.
- This hands-on approach strengthens understanding and prepares students for practical scenarios in their careers.
- Regular tutorial participation leads to better preparation for exams and assignments.
- Students gain confidence in their abilities through regular practice and constructive feedback.
- Tutorials often require pre-session preparation, fostering independent learning habits.
- They empower students to take initiative and responsibility for their education.
- Explaining solutions, participating in discussions, and presenting ideas during tutorials enhance communication and interpersonal skills.

#### c) CASE STUDY BASED LEARNING

A teaching strategy called case study-based learning (CBL) deepens students' comprehension of a subject by using real-world situations. Students actively examine, debate, and suggest solutions to challenging problems through case studies, which develops their critical thinking and problem-solving abilities. Teacher provides the needed guidance to understand the case study in a better way. Teacher search for various case studies that are very much helpful to the students such that their ability to understand the concept in many ways. Through group conversations, this method improves cooperation and communication skills while bridging the gap between theoretical knowledge and real-world application. CBL has several advantages, such better student participation and the divelopment of practical skills, but it also has drawbacks, like the time needed for preparation and the difficulty of some situations. Choosing pertinent instances, establishing clear expectations, promoting dialogues, and assessing student achievement based on their assessments and suggested solutions are all necessary for successful implementation. All things considered, CBL improves education by reorienting the emphasis from memorizing to the practical application of information.

For Each Subject, Students are formed as group of three and for each group one real time scenariobased Case Study is provided by the teacher. Teacher explores various real time scenarios, excellent case studies and provide to the student batches. With the help of the teacher support the students will be able to document the case study in the form of a report.

#### **SUBJECT: Design Thinking**

#### **Faculty: Murali Ponaganti**

#### **Case Study on Understanding Design Thinking Process**

A company is struggling with product innovation and has tasked a new team to revamp its design process. Discuss how the team could apply the principles of Design Thinking. Explain the process models they could adopt, and how these models help solve complex problems. Use real-world examples to illustrate your answer.

#### Case Study on Comparison of Design Thinking and Engineering Thinking

A multinational organization is debating whether to adopt Design Thinking or Engineering Thinking for a new product development initiative. Develop a case study that compares both approaches. Highlight specific advantages and disadvantages in the context of product development, problemsolving, and user satisfaction.

#### **Case Study on Design Thinking in the Healthcare Industry**

The healthcare industry is facing a critical challenge in improving patient experiences in hospitals. How can Design Thinking be utilized to address this problem? Create a case study demonstrating the steps of empathizing with patients, ideating solutions, and prototyping in a healthcare setting.

#### Case Study on Evolution of Design Thinking: A Historical Perspective

Discuss a case study about the origin of Design Thinking. Analyze the key milestones in its evolution and explain how it has grown from a purely design-centered approach to a universal problem-solving methodology across industries. Include examples of its applications in different domains.

#### Case Study on Importance of Design Thinking for Startups

A startup in the tech industry is struggling to differentiate its products from the competition. Create a case study showing how the startup can adopt Design Thinking to innovate and stay ahead in the market. Discuss how each phase of the Design Thinking process helps build a user-centric product that stands out.

#### Case Study on Application of Design Thinking in Social Impact Projects

NGOs are often tasked with solving pressing societal issues. Using a real or hypothetical example, build a case study that explains how an NGO can apply Design Thinking to develop sustainable solutions. Focus on stages like ideation, prototyping, and testing within the scope of limited resources.

#### Case Study on Redefining Education with Design Thinking

A university is looking to reform its educational model to make it more student-centered and engaging. Develop a case study that outlines how Design Thinking can be applied in education to reshape curricula and teaching methods. Describe the role of each process model (empathize, define, ideate, prototype, test) in achieving these reforms.

## Case Study on Design Thinking vs Engineering Thinking in Software Development

A software development company is divided between using Design Thinking or traditional Engineering Thinking to build a new app. Develop a detailed case study where you compare the outcomes of both approaches in software design. Discuss how user feedback, iterative design, and problem-solving vary between the two methods.

#### **Case Study on Design Thinking for Enhancing Customer Experience in Retail**

A retail chain is experiencing declining customer satisfaction and wants to redesign its in-store experience. Create a case study where Design Thinking is used to enhance customer interaction. Explain how empathy mapping, customer journey analysis, and rapid prototyping are applied to create solutions.

### Case Study on Design Thinking in the Public Sector: Smart City Initiatives

The government of a developing country is planning a smart city project to improve urban living. Build a case study that shows how Design Thinking can be utilized to address the needs of the citizens in the planning phase. Describe how empathizing with stakeholders, defining urban challenges, ideating, prototyping, and testing can lead to better city planning and management.

#### Case Study on Role of Empathy in Healthcare Product Design

A medical device company aims to create a new solution for elderly patients. Develop a case study

that explains how empathy plays a crucial role in understanding the physical and emotional needs of elderly users. How can the company use empathy tools such as interviews, surveys, and shadowing to define the patients' needs?

#### Case Study on Exploring the Define Phase in User-Centric Software Development

A software company wants to create an inclusive educational app for children with special needs. Build a case study that describes how the company can use empathy methods to gather insights and move through the Define phase. How do empathy tools help in clearly defining the unique problems faced by this user group?

#### Case Study on Empathizing with Users in Redesigning a Public Transportation System

A city is looking to revamp its public transportation system to improve accessibility for people with disabilities. Create a case study demonstrating how empathy methods such as observation and persona creation can be employed to understand user pain points. How does the team use this information in the Define phase to articulate the needs of disabled commuters?

#### Case Study on Prototyping and Testing for a Social Good App

An NGO wants to develop a mobile app to provide clean drinking water in rural areas. Develop a case study where the team follows the HCD process from empathizing with rural communities to testing various prototypes. How do iterative testing and empathy influence the design of the final product?

#### Case Study on Using Empathy Tools in Designing a Mental Health Support Platform

A tech startup is working on creating a mental health support platform. Write a case study that details how empathy tools such as user diaries, empathy maps, and focus groups can uncover emotional challenges faced by users. How can the insights gathered in the Empathize and Define phases shape the ideation and prototype stages?

#### **Case Study on Iterating Solutions for a Sustainable Energy Product**

A renewable energy company is designing a new product for off-grid communities. Build a case study explaining how the team iterates through the prototype phase after gathering user insights via empathy. Highlight the importance of testing with real users and refining based on feedback during the iterative design process.

#### Case Study on Exploring Methods of Empathy in a Retail Experience Redesign

A retail brand wants to redesign its in-store experience for a better customer journey. Develop a case study exploring how the company can use empathy methods like journey mapping and roleplaying to understand the emotional and practical needs of shoppers. How does empathy lead to a more focused Define phase?

#### **Case Study on Human-Centered Design in Developing Wearable Technology**

A tech company is developing wearable fitness technology. Create a case study showing how empathy helps identify the needs of fitness enthusiasts during the Empathize and Define phases. Describe how tools like empathy mapping and contextual inquiry can be employed to define the core issues faced by users.

## Case Study on Applying the Define Phase in Redesigning an E-commerce Platform

An e-commerce company is looking to improve its website's user experience. Write a case study on how empathy techniques such as user journey mapping and interviews help define user frustrations and needs. How can the Define phase narrow down the focus areas for the design team to address?

## Case Study on Understanding Empathy in the Design of a Smart Home System

A company is designing a smart home system for elderly users. Develop a case study detailing how empathy tools such as shadowing, interviews, and experience maps can reveal daily challenges faced by elderly users. Explain how this empathy-driven approach informs the Define phase and leads to better user-centric product features.

## Case Study on Brainstorming for Product Innovation in the Tech Industry

A tech company is struggling to come up with innovative features for their next-generation smartphone. Develop a case study that focuses on how the team can apply brainstorming techniques to generate a wide range of ideas. Discuss the advantages of brainstorming in promoting creativity and collaboration, and explain the role of ideation methods such as mind mapping and sketching in refining these ideas into feasible solutions.

## Case Study on Ideation Methods in Solving Environmental Challenges

A non-profit organization is looking for creative solutions to reduce plastic waste in urban areas. Create a case study that explores different ideation methods such as SCAMPER, brainwriting, and role-playing to generate diverse ideas. Analyze how these tools of ideation can help the team think outside the box and develop practical, sustainable solutions. Discuss the role of brainstorming in fostering a collaborative environment for innovative thinking.

### Case Study on Advantages of Brainstorming in Redesigning a Customer Service Experience

A retail company wants to improve its customer service experience and is using brainstorming sessions to gather ideas. Write a case study illustrating the advantages of brainstorming in identifying pain points and generating a variety of customer service improvements. Discuss how tools like affinity diagrams and concept mapping can be used to organize and refine the ideas generated during brainstorming.

# d) CODING PRACTICE THROUGH CODETANTRA AND HACKER RANKING

We offering online coding practice platforms that helps the students to enhance their skills, expand their knowledge and prepare for technical interviews.

It offers an extensive collection of more than 2000 coding challenges for C and Data Structures and Algorithms practice.

Theses helps the students for honing coding skills and interview preparation.

Students can practice in these coding challenges, contests and competitions for their needs.



## 9. THEORY TO PRACTICE

Theory to practice is fundamentally about acquiring new skills or knowledge through direct experience rather than through passive activities like reading, watching, or listening. It is one of the most natural and effective ways of learning, leading to higher engagement rates, improved long-term retention, and better transferability of skills compared to other methods. This approach fosters richer skill development.

In a technology-driven world, the most essential skills for students is practical learning power skills, which encompass mindset, creativity, leadership, and self-management.

Well-structured, supervised, and assessed practical learning programs can encourage academic inquiry by promoting interdisciplinary learning and combining strong technical skills in engineering design and computation with key business skills, such as marketing and business model generation.

Integrating teaching and learning approaches is essential due to the increasing use of emerging technologies in academia, research, and industry. This integration allows students to gain a clearer understanding of the industry landscape. Conceptual experiments demonstrate the flow of processes in core industries, enabling students to connect and apply the knowledge acquired in various labs to complete their tasks.

Course N	ame: DBMS
SL. NO	Conceptual Experiments
1	Implementation of Railway Reservation System
2.	Implementation of Employee Management:
3.	Implementation of Banking System
4	Implementation of Hotel Management
5	Implementation of E-Commerce Database
6.	Implementation of Hospital Management
7	Implementation of Student Management:
8	Implementation of Library Management
9	Implementation of Fashion Designer Website.
10	Implementation of Company Management

These Conceptual experiments are designed to cultivate a successful graduate's ability to grasp fundamental engineering principles, apply knowledge to solve complex problems, and develop the interpersonal skills necessary to work effectively as part of a team.

At the beginning of each semester, a list of Conceptual experiments is provided to students to help them acquire practical skills throughout their studies. Students are encouraged to select experiments from this list or to discuss their interests with the relevant faculty members. Below is a sample list of conceptual experiments available for selection.

# **10. DIGITAL LIBRARY**

The college's digital library features a rich collection of resources, including lecture notes, video lectures, journals, and more, which students can access to enhance their understanding of both theoretical and laboratory courses. This resource not only helps students deepen their knowledge in their program of study but also supports them in preparing tech talks, concept videos, and literature reviews for their projects.

Incorporating Knimbus into the Digital Library has offered numerous advantages for the institution, improving the educational experience for students and bolstering the research capabilities of faculty. It provides access to subscribed content, e-journals, e-books and e-databases, the digital nature of Knimbus allows students and faculty to access resources from anywhere, supporting flexible and remote learning environments.

Furthermore, the knimbus has integrated NPTEL courses into its framework. The video lectures offered by NPTEL serve as a valuable self-learning resource for students, and all courses provided by IITs are archived in the digital library for use by both students and faculty.

https://mallareddyecw.knimbus.com/user#/home



# **11. TECHNICAL SEMINARS**

Technical seminars are invaluable for students as they provide insights into current trends, technologies, and practices in various fields, helping students understand the real-world applications of their studies.

Seminars often focus on practical skills, offering workshops or hands-on sessions that enhance students' technical competencies. Presenting their work or ideas in seminars allows students to receive constructive feedback and learn from others' experiences. Technical seminars often cover a range of topics, encouraging students to explore different fields and discover new interests.

Technical seminars provide students with essential benefits that significantly enhance their educational experience. They offer valuable industry insights, allowing students to stay updated on current trends and technologies, which bridges the gap between theory and practice. Additionally, these seminars help develop practical skills through hands-on workshops, fostering competencies that are crucial for employability. Networking opportunities with professionals and peers can lead to internships and career connections, while exposure to expert speakers inspires and motivates students in their academic and professional journeys. Technical seminars help students develop essential skills like public speaking, critical thinking, and networking, preparing them for professional growth and career readiness. Teacher provides various domains and ideas out of which students will be selecting one particular idea and teacher help in preparing the students for the seminars.

Technical seminars are included in the semester wise time table and week wise schedule and various emerging topics to be selected by the students are provided prior to the start of the semester, such that students can explore various IEEE papers and various other standard research and review papers to gather the literature. The students then prepare a power point presentation with the help of the respective teachers such that it can be focusing on current trends and technologies.

S.	Come Code			Т			Max	. Marks
No No	Course Coue	Subject	L		P	С	INT	EXT
		Professional Elective – V						
1	2212PE05	Human Computer Interaction						
	2205PE09	Software Quality Assurance & Testing						
	2266PE09	Game Theory	3	0	0	3	40	60
	2262PE19	Database Security						
	2267PE11	Data Wrangling						
	2266PE08	Natural Language Processing						
		Professional Elective – VI		1	a. – 6.		6	
	2212PE08	e-Commerce						
	2205PE08	Software Process & Project Management						
2	2266PE10	Augmented Reality & Virtual Reality 3				3	40	60
	2262PE17	Digital Forensics						
	2267PE14	Big Data Architecture-Spark						
	2266PE06	Generative Artificial Intelligence						
3		Onen Elective-IV	3	0	0	3	40	60
4	2212PR08	Technical Seminar	2	0	0	1	100	0
5	2212PR09	Innovation Startup & Entrepreneurship	0	0	6	2	40	60
6	2212PR10	Research Project-II	0	0	6	8	40	60
7	2200MC08	RM & Intellectual Property Rights*	2	0	0	0	100	0
8		TOTAL	13	0	12	20	400	300

IV Year B. Tech - II Semester (VIII Semester)

## **12. GROUP DISCUSSIONS**

A Group Discussion (GD) is a widely used evaluation technique in recruitment, involving 6 to 15 participants discussing a specific topic or problem. The primary goal of a group discussion is to assess a candidate's ability to communicate, collaborate, and present their ideas effectively within a group setting.

Group discussions play a crucial role in assessing not just an individual's knowledge but also their interpersonal skills, teamwork, and ability to think on their feet.

- Testing Communication Skills
- Teamwork and Leadership
- Problem-Solving and Decision-Making
- Knowledge and Awareness
- Time Management
- Convincing and Persuasive Skills
- Handling Pressure



# Availability of Work for Peer Review and Critique

The faculty of Malla Reddy Engineering College for Women actively implements innovative teaching and learning strategies to enhance the educational experience. These innovations include modern pedagogical techniques, technology integration, and interdisciplinary approaches. To ensure quality and continuous improvement, the following practices are in place for peer review and critique:

#### 1. Documenting and Sharing Innovations:

Faculty members document their innovative teaching practices in lesson plans, case studies, or research articles and share them in department meetings, workshops, and faculty development programs.

#### 2. Peer Review Mechanisms:

- Regular departmental discussions are held, where faculty present their innovative teaching methods for feedback from peers.
- Faculty members undergo a structured peer-review process for academic content, teaching strategies, and research outputs.

# 3. Faculty Development Programs (FDPs):

Internal and external FDPs are organized to discuss and review innovative teaching methods and tools. Faculty members are encouraged to present their work in these programs for constructive critique.

#### 4. Collaborative Learning Practices:

Inter-departmental collaborations and expert reviews are conducted to align innovative methods with industry standards and pedagogical advancements.

# 5. Feedback Collection:

Feedback is sought from students, peers, and academic experts on the effectiveness of the innovations. This helps refine teaching methods and ensures they meet educational objectives.

These practices demonstrate the faculty's commitment to fostering an academic environment of continuous learning and innovation.

# Reproducibility and Reusability by Other Scholars for Further Development

The faculty at Malla Reddy Engineering College for Women ensures that their innovative teaching and learning practices are reproducible and reusable for other scholars to build upon. This is achieved through systematic documentation, dissemination, and collaboration. The approaches include:

# 1. Structured Documentation:

- Innovative teaching strategies, tools, and methodologies are meticulously documented like lesson plans, project reports, and case studies.
- These documents include clear objectives, implementation steps, and outcomes to facilitate reproducibility.

# 2. Sharing Through Open Educational Resources (OERs):

- Faculty develop and share educational content, such as lecture notes, instructional videos, and assignments, on public platforms or institutional repositories.
- These resources are designed to be reused and adapted by other educators and institutions.
- 3. Publication in Peer-Reviewed Journals and Conferences:
  - Faculty publish their work in reputed journals and present it at conferences, ensuring visibility and accessibility to the academic community.
  - These publications provide a foundation for other scholars to validate, replicate, and expand upon the innovations.

# 4. Workshops and Training Programs:

- Innovative practices are shared with other educators through workshops, faculty development programs (FDPs), and seminars.
- These events allow for practical demonstrations and discussions, encouraging adoption and adaptation.
- 5. Collaboration with Academic and Industry Experts:
  - Faculty collaborate with peers from other institutions and industry experts to refine and propagate their teaching practices.
  - These collaborations often result in scalable models that can be further developed.

## 6. Integration into Curriculum Design:

• Effective innovations are incorporated into the curriculum, making them a part of institutional best practices and enabling their application in different contexts.

# 7. Encouraging Research and Development:

• Faculty motivate students and peers to conduct research on these innovations, ensuring continuous improvement and the generation of new knowledge.

Through these efforts, the institution fosters a culture of academic sharing and advancement, ensuring that innovative teaching methodologies are accessible and impactful across the educational community.