

B. Tech Computer Science and Engineering (Artificial Intelligence and Machine Learning) Modified Scheme of Studies/Examination

Semester V

S. No.	Course No./ Code	Subject	L:T:P	Hours/ Week	Credits	Examination Schedule (Marks)				Duration of Exam (Hours)
						End Semester Exam	Internal assessment	Practical Exam	Total	
1	B24-CAM-301	Web and Internet Technology	3:0:0	3	3	70	30	0	100	3
2	B24-CAM-303	Interactive Computer Graphics	3:0:0	3	3	70	30	0	100	3
3	B24-CAM-305	Advance Machine Learning	3:1:0	4	4	70	30	0	100	3
4	B24-CAM-307	Operating Systems	3:0:0	3	3	70	30	0	100	3
5	---	Open Elective-II	3:0:0	3	3	70	30	0	100	3
6	B24-CAM-309	Web and Internet Technology Lab	0:0:2	2	1	0	40	60	100	3
7	B24-CAM-311	ICG Lab	0:0:2	2	1	0	40	60	100	3
8	B24-CAM-313	Machine Learning Lab-II	0:0:2	2	1	0	40	60	100	3
9	B24-CAM-315	Industrial Training-I	0:0:2	2	1	--	100	--	100	3
10	B24-MAC-301	Constitution of India	2:0:0	2	1	--	100	0	100	3
11	B24-VAC-302/304/306/308/310	Hindi Language Skills/ Sanskrit Language Skills/ German Language Skills/ Japanese Language Skills/ French Language Skills	2:0:0	2	1	--	100	--	100	3
TOTAL				28	22	350	570	180	1100	

Open Elective-II	
Digital Electronics	B24-ESC-212
Innovation, Start-ups and Entrepreneurship	B24-HSM-202
Bioinformatics & Computational Biology	B24-OEC-425

Lesson Plan:

Name of the Faculty:	Ms. Sangeeta		
Discipline:	B.Tech (AIML-CSE)		
Semester:	5 th		
Subject:	Advance Machine Learning(B24-CAM-305)		
Course Outcome:			
	CO1	To understand advanced ML concepts, generative models, and Optimization techniques.	
	CO2	To learn reinforcement learning algorithms and their real-world Applications.	
	CO3	To explore deep neural networks, Transformers, and advanced Architectures.	
	CO4	To apply advanced ML techniques across various domains and address AI challenges.	
WorkLoad(Lecture/Practical) perweek(Inhours):	Lecture-3		

Lec.	Unit	Topic	Pedagogy
1	I	Introduction to Advanced ML; high-dimensional data and curse of dimensionality	Board + PPT + worked example
2	I	Feature selection, dimensionality reduction and representation learning	Board + PPT + worked example
3	I	Generative modeling: probability view and autoencoders	Board + PPT + worked example
4	I	GAN architecture, objective, training and applications	Board + PPT + worked example
5	I	VAE architecture, latent variables and ELBO intuition	Board + PPT + worked example
6	I	Ensemble learning: bagging and randomization	Board + PPT + worked example
7	I	Boosting: AdaBoost, gradient boosting and intuition	Board + PPT + worked example
8	I	Stacking and blending; ensemble comparison	Board + PPT + worked

			example
9	I	Bayesian inference and probabilistic models	Board + PPT + worked example
10	I	Advanced optimization: momentum, Adam, RMSprop, second-order ideas	Board + PPT + worked example
11	I	Regularization: L1, L2, dropout, batch normalization	Board + PPT + worked example
12	I	Self-supervised, meta-, transfer, domain adaptation and multi-task learning	Board + PPT + worked example
13	II	RL fundamentals: agent, environment, state, action and reward	Board + PPT + worked example
14	II	Markov property and Markov Decision Processes	Board + PPT + worked example
15	II	Reward design and value functions	Board + PPT + worked example
16	II	Policy evaluation and policy optimization	Board + PPT + worked example
17	II	Temporal-Difference learning	Board + PPT + worked example
18	II	Q-learning and SARSA comparison	Board + PPT + worked example
19	II	Deep Q-Networks, replay buffer and target networks	Board + PPT + worked example
20	II	Policy-gradient methods	Board + PPT + worked example
21	II	Actor-Critic algorithms	Board + PPT + worked example
22	II	Exploration–exploitation strategies and deep RL	Board + PPT + worked example
23	II	Multi-agent, inverse, hierarchical and model-based RL	Board + PPT + worked example
24	III	Feed-forward neural networks and representation learning	Board + PPT + worked example
25	III	Backpropagation and computational graph	Board + PPT + worked example
26	III	Optimization with Adam, RMSprop and L-BFGS	Board + PPT + worked example
27	III	CNN fundamentals: convolution, padding, stride and pooling	Board + PPT + worked example

28	III	CNN training and feature visualization	Board + PPT + worked example
29	III	Object detection: one-stage and two-stage ideas	Board + PPT + worked example
30	III	Image segmentation: semantic and instance segmentation	Board + PPT + worked example
31	III	ResNet and residual learning	Board + PPT + worked example
32	III	EfficientNet and compound scaling	Board + PPT + worked example
33	III	Vision Transformers and image attention	Board + PPT + worked example
34	III	RNN, LSTM and GRU	Board + PPT + worked example
35	III	Attention and Transformer architecture	Board + PPT + worked example
36	III	BERT, GPT, self-supervised learning and transfer	Board + PPT + worked example
37	III	Energy-based models, GNNs and spiking neural networks	Board + PPT + worked example
38	IV	NLP applications: sentiment analysis and machine translation	Board + PPT + worked example
39	IV	Conversational AI and large pretrained models	Board + PPT + worked example
40	IV	Computer vision: recognition, autonomous driving and video analytics	Board + PPT + worked example
41	IV	Anomaly detection, recommendation systems and AI automation	Board + PPT + worked example
42	IV	Healthcare case study: prediction, imaging and drug discovery	Board + PPT + worked example
43	IV	Finance case study: fraud detection, risk and algorithmic trading	Board + PPT + worked example
44	IV	Explainability, fairness, bias and responsible AI	Board + PPT + worked example
45	IV	Deployment: scalability, latency, monitoring, drift and reliability	Board + PPT + worked example
46	IV	Integrated case study and revision	Board + PPT + worked example

Name of the Faculty:		Mr. Sumit Mahana	
Discipline:		B.Tech (CSE)	
Semester:		5th	
Subject:		Web and Internet Technology	
Subject Code:		B24-CAM-301	
Work Load(Lecture/Practical) per week (In hours):		Lecture-3	
Course Outcome:		CO1	To understand the Internet, its architecture, and applications and to Acquire Basic the knowledge of basic principles of Website design.
		CO2	To learn HTML, XHTML, XML and CSS for structured Web-based Development.
		CO3	To develop interactive Web applications using JavaScript
		CO4	To explore modern Web development frameworks and deployment Tools and Technologies.
Sr.No	Lecture No.	Theory	
		Topic(Including Assignment/Test/Quiz)	Pedagogy(PPT/Chalk and Board/Video Recording /Activity/Case Study)
1.	L1	Unit-I:InformationArchitecture IntroductiontoWorld Wide Web, Web browsers, Web servers,	Chalk-Board
2.	L2	Hypertext Transfer Protocol, URLs, The role of information architecture	Chalk-Board
3.	L3	Collaboration and communication, organizing information,	Chalk-Board
4.	L4	Website sand Intranets, creating cohesive organization systems,	Chalk-Board
5.	L5	Designing navigation systems ,types of navigation systems,	Chalk-Board

6.	L6	Searching systems, designing the search interface	Chalk-Board
7.	L7	Basic steps for developing Website, Web publishing and hosting,	Chalk-Board
8.	L8	Types of hosting packages, five golden rules of Web designing.	Chalk-Board
9.	L9	Assignment1:Webpublishingandhosting,typesof hosting Packages	Offline
10.	L10	Unit-II: Web Essentials and Standards Introduction to Elements of HTML	Chalk-Board
11.	L11	CSS	Chalk-Board
12.	L13	Introduction to Document Object Model (DOM)	Chalk-Board
13.	L14	Working with text, list, tables,	Chalk-Board
14	L15	frames, hyperlinks	Chalk-Board
15..	L16	Images multimedia	Chalk-Board
16.	L17	Forms and controls,	Chalk-Board
17.	L18	CSS properties	Chalk-Board
18	L19	Id and class, box model	Chalk-Board
19		SessionalTest:1	Offline
20	L20	Introduction to XHTML: XML ,Move to XHTML, Metatags, Benefits of XML	Chalk-Board
21.	L21	well-formed XML documents, XML syntax, XML declaration,	Chalk-Board
	L22	XML with CSS, Document Type Definition (DTD)	Chalk-Board
22	L23	Creating DTD and its types(internal and external DTD),XSL	Chalk-Board
23	L24	RevisionUnit:2	Chalk-Board
24.	L25	Unit-III: Scripting Language: JavaScript JavaScript : Data types, values, variables, expressions and operators,	Chalk-Board

25.	L26	Java Script statements, loops	Chalk-Board
26	L27	arrays, strings, methods, defining and invoking functions and their closure	Chalk-Board
27	L28	Random functions and math library	Chalk-Board
28.	L29	Represent dates, pattern matching and regular expressions.	Chalk-Board
29.	L30	Difference between server side and client side JavaScript Changing CSS style	Chalk-Board
30.	L31	Hiding HTML elements ,showing hidden HTML elements	Chalk-Board
31.	L32	DOM and event handling, error handling	Chalk-Board
32	L33	Mouse, text, and keyboard events and cookies.	Chalk-Board
33	L34	Revision Unit:3	Chalk-Board
34	L35	Unit-IV: Advanced Web Development and Web Applications Frameworks Introduction to PHP,PHP syntax, variables ,constants	
35		Sessional Test:2	Offline
36	L36	Constants ,data types ,and operator	Chalk-Board
37	L37	Control structures :conditional statements(if-else, switch), loops(for ,while ,do-while),	Chalk-Board
38.	L38.	Functions : Defining and calling functions, built-in-functions, and user-defined functions,	Chalk-Board
39.	L39.	Working with forms: GET and POST methods	Chalk-Board
40.	L40.	Form validation ,handling form data,	Chalk-Board
41.	L41.	PHP and MySQL :Database connectivity,	Chalk-Board
42.	L42	CRUD(Create ,Read ,Update ,Delete) operations	Chalk-Board
43.	L43	Introduction to Web application frame works and tools:Angular JS	Chalk-Board

44.	L44	ReactJS, NodeJS,	Chalk-Board
45.	L45	Express JS, Bootstrap,	Chalk-Board
46.	L46	Firebase ,and Django-UI&UX.	Chalk-Board
47.	L47	RevisionUnit:4	Chalk-Board
48.	L48	Revision Unit :1&2	
49.	L49	Revision Unit :3 &4	

Lesson Plan :

Name of the Faculty:	Mr. Ravi Kumar	
Discipline:	B.Tech (CSE)	
Semester:	5th	
Subject:	Interactive Computer Graphics(B24-CAM-303)	
Course Outcome:	CO1	Explore the background and standard line and circle drawing algorithms.
	CO2	Exposure of various transformation approaches and its comparative Analysis.
	CO3	Illustrate Projection and clipping with different techniques.
	CO4	Apply design principles to create different curves and explore hidden lines And surface techniques.
WorkLoad(Lecture/Practical) per week(In hours):	Lecture-3	

Lec.	Unit	Topic	Contents
1	Unit 1	Introduction to Computer Graphics	Applications of Computer Graphics; overview of graphics system; raster vs vector concepts
2		Components of a Graphics System	CPU, GPU, memory, frame buffer, display processor, input/output devices
3		Display Devices	CRT, raster-scan and random-scan displays; color displays; basic working
4		Scan Conversion: Points & Lines	Scan conversion concept; pixel addressing; point plotting; line rasterization basics
5		DDA Line Drawing Algorithm	DDA derivation, steps, slope cases, positive/negative slope
6		Bresenham's Line Drawing Algorithm	Decision parameter, integer arithmetic, algorithm steps
7		Bresenham vs DDA	Comparison; efficiency; error/rounding; different line cases
8		Circle Drawing Algorithms	Bresenham circle algorithm; symmetry and decision parameter
9		Midpoint Circle Algorithm + Unit Revision	Midpoint method; decision parameter; comparison with Bresenham circle
10		Window and Viewport	Window, viewport, coordinate systems; mapping concept

		Concepts	
11		Window-to-Viewport Transformation	Derivation of mapping equations; scale and translation factors
12		2-D Transformations: Translation & Scaling	Translation and scaling matrices; fixed point scaling
13		2-D Transformations: Rotation	Rotation matrix; clockwise/anticlockwise rotation; rotation about arbitrary point
14		2-D Transformations: Reflection & Shearing	Reflection about axes/lines; X-shear and Y-shear
15		Homogeneous Coordinates	3×3 matrices; combining transformations; composite transformation
16		3-D Transformations	3-D translation, scaling, rotation
17	Unit 2	Composite 3-D Transformations	Order of transformations; coordinate systems; rotation about axes
19	Unit 3	Clipping Fundamentals	Need for clipping; clipping window; point clipping and basic line clipping
20		4-Bit Code / Outcode Algorithm	Region codes; inside/outside tests
21		Cohen-Sutherland Line Clipping	Trivial accept/reject, clipping procedure
22		Cohen-Sutherland: Intersection Continue...	Boundary intersection equations; horizontal/vertical clipping cases
23		Cohen-Sutherland Advanced Problems	Mixed cases; repeated clipping; final clipped endpoints
24		Polygon Clipping	Polygon clipping concept; Sutherland-Hodgman algorithm and inside/outside tests
25		Sutherland-Hodgman: Numerical Problems	Clipping polygon against left/right/top/bottom boundaries
26		Curve & Text Clipping	Curve clipping concepts; text clipping methods; applications
27		Projection + Unit Revision	Parallel projection; perspective projection; vanishing points; revision of clipping
28		3-D Curves and Surfaces	Representation of 3-D curves/surfaces; interpolation vs approximation
29		Parametric Conditions	Parametric representation; endpoint/intermediate conditions; curve construction
30		Geometric Continuity	C0, C1, C2 continuity; joining curves; continuity conditions
31		Bezier Curves: Fundamentals	Bezier definition; control points; Bernstein basis functions
32		Properties of Bezier Curves	Endpoint interpolation; convex hull; symmetry; affine invariance; tangent properties
33		Bezier Surfaces	Tensor-product idea; control-point grid; properties and applications
34		Hidden Surface Removal	Hidden surface elimination; depth-buffer (Z-buffer) algorithm; scan-line coherence and area coherence
35	Unit 4	Painter's Algorithm + Complete Revision	Painter's algorithm; comparison of hidden-surface methods; full syllabus revision

Lesson Plan:

Name of the Faculty:		Dr. Vivek Sharma	
Discipline:		B.Tech (CSE)	
Semester:		5th	
Subject:		Operating System (B24-CAM-307)	
Course Outcome:		CO1	To understand the structure and functions of Operating system.
		CO2	To learn about processes, threads and scheduling algorithms.
		CO3	To understand the concept of deadlocks
		CO4	To study I/O management and file systems, Protection and security
WorkLoad(Lecture/Practical) perweek(Inhours):		Lecture-3	
Sr.No	Lecture No.	Theory	
		Topic(Including Assignment/Test/Quiz)	Pedagogy(PPT/Chalk and Board/Video Recording /Activity/Case Study)
1.	L1	Unit1: Introduction: Introduction to OS. Operating system functions, Different types of O.S.: batch process, multi-programmed	Chalk-Board
2.	L2	time-sharing	Chalk-Board
3.	L3	real-time, distributed, parallel.	Chalk-Board
4.	L4	System Structure: Computer system operation	Chalk-Board
5.	L5	I/O structre, storage structure, storage hierarchy,	Chalk-Board
6.	L6	different types of protections	Chalk-Board

7.	L7	operating system structure (simple, layered, virtual machine)	Chalk-Board
8.	L8	O/S services, system calls.	Chalk-Board
9.	L9	Sessional	Offline
10.	L10	Unit2: CPU scheduling: scheduling criteria, preemptive and non-preemptive scheduling, scheduling algorithms, algorithm evaluation,	Chalk-Board
11.	L11	Multi processor scheduling, Threads: overview, benefits of threads, user and kernel threads.,	Chalk-Board
12.	L13	Process Management: Concept of processes, process states, process control	Chalk-Board
13.	L14	cooperating processes, inter process communication.	Chalk-Board
14	L15	Process Synchronization: background, critical section problem, critical region, synchronization hardware,	Chalk-Board
15..	L16	Classical problems of synchronization, semaphores.	Chalk-Board
16.	L17	Unit3: Deadlocks: Concept of deadlock	Chalk-Board
17.	L18	Deadlock characterization, deadlock prevention	Chalk-Board
18	L19	Deadlock avoidance, deadlock detection , recovery from deadlock	Chalk-Board
19		Sessional	Offline
20	L20	Memory Management: background, logical vs. physical address space	Chalk-Board
21.	L21	Contiguous memory allocation, paging	Chalk-Board
	L22	Revision	Chalk-Board
22	L23	Segmentation with paging	Chalk-Board
23	L24	Virtual Memory: background, demand paging, segmentation	Chalk-Board
24.	L25	Concept of fragmentation	Chalk-Board
25.	L26	Concept of page replacement	Chalk-Board

26	L27	Page replacement algorithms	Chalk-Board
27	L28	Allocation of frames, thrashing	Chalk-Board
28.	L29	Unit 4: File Systems: file concept, file organization and access methods,	Chalk-Board
29.	L30	Allocation methods, directory structure, free-space management	Chalk-Board
30.	L31	I/O Management: I/O hardware, polling, interrupts, DMA,	Chalk-Board
31.	L32	kernel I/O subsystem (scheduling, buffering, caching, spooling and device reservation)	Chalk-Board
32	L33	Disk Management: disk structure, disk scheduling (FCFS, SSTF)	Chalk-Board
33	L34	SCAN, C SCAN	Chalk-Board
34	L35	disk reliability	
35	L36	Disk Performance parameters Protection and Security: Goals of protection and security	Offline
36	L37	Security attacks, authentication, program	Chalk-Board
37	L38.	Threats, system threats	Chalk-Board
38.	L39.	Threat monitoring	Chalk-Board
39.		Sessional	Chalk-Board

Lesson Plan:

Name of the Faculty:		Ms. Pratibha	
Discipline:		B.Tech (CSE)	
Semester:		5 th	
Subject:		Innovation, Startups and Entrepreneurship (B24-HSM-202)	
Course Outcome:		CO1	Understanding the essence of innovation and features of innovative processes; models and methods of innovative entrepreneurship, the role of innovation as a major factor in creating the value of companies
		CO2	Understanding, the dynamic role of entrepreneurship and small businesses, types of business structure, organizing and managing a Small Business
		CO3	Understanding concept of startups, Control Strategic Marketing Planning, concept of incubation and proto type, new Product Development, Business Plan Creation
		CO4	Understanding risk analysis in business, financing methods, role of government in supporting entrepreneurship
WorkLoad(Lecture/Practical) perweek(Inhours):		Lecture-3	
Sr.No	Lecture No.	Theory	
		Topic(Including Assignment/Test/Quiz)	Pedagogy(PPT/Chalk and Board/Video Recording /Activity/Case Study)
1.	L1	Unit1: Introduction to Innovation and Entrepreneurial Idea Generation and Identifying Business Opportunities	Chalk-Board
2.	L2	Management Skills for Entrepreneurs, Innovations and their forms	Chalk-Board

3.	L3	Innovation - features and characteristics, Factors initiating innovations	Chalk-Board
4.	L4	Innovation process and its stages	Chalk-Board
5.	L5	Statistical measurement of innovation	Chalk-Board
6.	L6	Model of innovation, Source of innovation	Chalk-Board
7.	L7	Technological transfer, Information technology to support innovation	Chalk-Board
8.	L8	Difference between technological and non-technological innovation	Chalk-Board
9.		Sessional	Offline
10.	L9	Unit2: Introduction to Entrepreneurship and Start – Ups	Chalk-Board
11.	L10	Definitions, Traits of an entrepreneur	Chalk-Board
12.	L11	Intrapreneurship, Entrepreneurial Motivation	Chalk-Board
13.	L13	Functions of Entrepreneur, Concept, Growth of Entrepreneurship in India	Chalk-Board
14	L14	Types of Business Structures, Similarities	Chalk-Board
15..	L15	differences between entrepreneurs and managers, Business Ideas and their implementation	Chalk-Board
16.	L16	Discovering ideas and visualizing the business, Activity map	Chalk-Board
17.	L17	Types of startups, role of entrepreneurs in economic development, future of entrepreneurs, entrepreneurial process	Chalk-Board
18	L18	Unit3: Start-ups - Initial idea generation	Chalk-Board
19		Sessional	Offline
20	L19	planning stages and incubation referring to the development process of identifying and developing new ideas for products,	Chalk-Board
21.	L20	planning stages and incubation referring to the development process of identifying and developing new ideas for products,	Chalk-Board
22	L21	services, or processes, and creating a working model or prototype to test the feasibility of the concept.,	Chalk-Board

23	L22	Market Analysis – Identifying the target market,	Chalk-Board
24.	L23	Competition evaluation and Strategy Development, Five Cs of Opportunity Identification	Chalk-Board
25.	L24	Market Opportunity Identification in emerging technology companies,	Chalk-Board
26	L25	Process of creating and growing a new business venture, Business plan of the innovation project.	Chalk-Board
27	L26	Unit4: Risk Analysis	Chalk-Board
28.	L27	Risk management in venture projects	Chalk-Board
29.	L28	Financing	Chalk-Board
30.	L29	Revision	Chalk-Board
31.	L30	Protection of Ideas Financing methods available for start-ups in India	Chalk-Board
32	L31	Protection of Ideas Financing methods available for start-ups in India	Chalk-Board
33	L32	Communication of Ideas to potential investors – Investor Pitch	Chalk-Board
34	L33	Patenting and Licenses, exit strategies for entrepreneurs	
35	L34	bankruptcy, and succession and harvesting strategy	Offline
36	L35	venture capital, angel investment, and crowd funding	Chalk-Board
37	L36	Government support- programs and initiatives aimed at supporting the development of new ideas, innovations, and startups, funding and mentorship,	Chalk-Board
38.	L37	IPR - legal protection of a person's or organization's rights to their invention, brand, or creative work	Chalk-Board
39.		Sessional	Chalk-Board

Lesson Plan:

Name of the Faculty:	Ms.Kiran	
Discipline:	B.Tech (CSE)	
Semester:	5th	
Subject:	Web and Internet Technology Lab(B24-CAM-309)	
Course Outcome:	CO1	To implement interactive and responsive Web pages using HTML, CSS, and JavaScript..
	CO2	To develop server-side applications using PHP, MySQL, and Web applications frameworks for dynamic content management
	CO3	To integrate APIs ,authentication, and database operations to build full- Stack web applications.
	CO4	To deploy Web applications on cloud platforms
WorkLoad(Lecture/Practical) perweek(Inhours):	3 Hour	

List of Practical's

1. Design a Web page of your home town with an attractive background color, text color, an image, font etc. (use internal CSS).
2. Design a Web page to format college Website using external, internal, and inline CSS.
3. Create HTML Page with Java Script which takes integer number as input and tells whether the number is odd or even.
4. Write a program to validate a user form using JavaScript.
5. Write a program to create a dynamic image gallery using JavaScript.
6. Create XML file to store student information like enrollment number, name, mobile number, E-mail Id and also create DTD for above XML file.
7. Write a PHP program to check if number is prime or not.
8. Write a PHP program to print first10 Fibonacci Numbers.
9. Create HTML page that contain textbox, submit / reset button.
10. Write PHP program to display this information and also store into text file.
11. Write a PHP Script for login authentication.
12. Design an html form which takes username and password from user and validate against stored username and password in file.
13. Write PHP Script for storing and retrieving user information from My SQL table. (i) Design HTML page which takes name, address, E-mail and mobile, (ii) No.

From userregister.php), (iii) Store this data in My SQL database / text file, and (iv) Next page display all user in html table using PHP (display.php).

14. Write a program to implement a simple login and registration system using PHP and My SQL.
15. Write a program to implement session management and cookies in PHP. Write a program to create a responsive Web page using Bootstrap.
16. Write a program to fetch and display data from an API using JavaScript (Fetch API/Axios).
17. Write a program using React JS/ Angular JS to build as impledynamic Web application.
18. Write a program using Node JS/ Express JS to create basic server-side application.
19. Write a program to deploy a Web application on Firebase.
20. Write a program to build as implicate application using Web Sockets and Node JS.
21. Write a program to integrate Google Maps API into a Web page.

Lesson Plan:

Name of the Faculty:	Mr. Ravi Kumar	
Discipline:	B.Tech (CSE)	
Semester:	5th	
Subject:	ICG Lab (B24-CAM-311)	
Course Outcome:	CO1	Hands on experiments on 2-D transformations.
	CO2	Implement various Line& Circle Drawing Algorithms.
	CO3	Implement Line Clipping.
	CO4	Conceptual implementation of Clipping and Polygon filling
WorkLoad(Lecture/Practical) perweek(Inhours):	3 Hour	

List of Practicals

1. Write a program to move an object using the concept of 2-D translation transformation.
2. Write a program to move an object using the concept of 2-D rotation transformation.
3. Write a program to move an object using the concept of 2-D scaling transformation.
4. Write a program to move an object using the concept of 2-D shearing transformation.
5. Write a program to implement DDA line drawing algorithm.
6. Write a program to implement Bresenham's line drawing algorithm.
7. Write a program to implement Bresenham's circle drawing algorithm.
8. Write a program to implement the Midpoint circle drawing algorithm.
9. Write a program to perform line clipping.
10. Write a program to implement polygon filling.

Lesson Plan:

Name of the Faculty:	Ms. Sangeeta	
Discipline:	B.Tech (CSE)	
Semester:	5th	
Subject:	Machine Learning Lab-II (B24-CAM-313)	
Course Outcome:	CO1	To develop proficiency in fundamental operations for machine learning.
	CO2	To implement supervised learning algorithms for predictive modeling and Classification.
	CO3	To apply unsupervised learning techniques for clustering and dimensionality reduction
	CO4	To enhance problem-solving skills through practical machine learning implementations
WorkLoad(Lecture/Practical) perweek(Inhours):	3 Hour	

List of Practical's

1. Implement the AND, OR, NAND, and NOR using a Perception.
2. Implement the logic behind the Recurrent Neural Network (RNN).
3. Implement the logic behind an Artificial Neural Network (ANN).
4. Implement the techniques of Convolutional Neural Network (CNN).
5. Implement the XOR and XNOR using a Multilayer Perceptron.
6. Implement Particle Swarm Optimization (PSO).
7. Implement Back propagation.
8. Implement the Naive Bayesian Classification Algorithm.
9. Implement Generative Adversarial Network (GAN).
10. Implement Principal Component Analysis (PCA).

