



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109
DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE



SESSION: 2023-2024 (EVEN SEMESTER)

LESSON PLAN

NAME OF THE STAFF : Mrs. Madhusmita Mishra

SUBJECT CODE/TITLE : 21AI63/Machine Learning

SEMESTER/ YEAR : VI/III

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE 1							
1	Introduction: Machine learning Landscape: what is ML?	L+D	BB	1	1	29/04/24	29/04/24
2	Why, Types of ML	L+D	BB	1	2	30/04/24	30/04/24
3	Main challenges of ML	L+D	BB	1	3	3/05/2024	3/05/2024
4	Concept learning and Learning Problems - Designing Learning systems	L+D	BB	1	4	6/05/2024	13/05/2024
5	Perspectives and Issues, Concept Learning	L+D	BB	1	5	7/05/2024	14/05/2024
6	Find S, Version Spaces	L+D	BB	1	6	8/05/2024	14/05/2024
7	Candidate Elimination Algorithm	L+D	BB	1	7	11/05/2024	15/05/2024
8	Remarks on VS, Inductive bias	L+D	BB	1	8	13/05/2024	20/05/2024
9	Tutorial	L+D	BB	2	-	14/05/2024	20/05/2024

										15/05/2024	
MODULE 2											
10	End to end Machine learning Project: Working with real data	L+D	BB	1	9	17/05/2024					21/05/2024
11	Look at the big picture, Get the data	L+D	BB	1	10	20/05/2024					21/05/2024
12	Discover and Visualize the data.	L+D	BB	1	11	21/05/2024					22/05/2024
13	Prepare the data	L+D	BB	1	12	22/05/2024					22/05/2024
14	Select and train the model, Fine tune your model	L+D	BB	1	13	24/05/2024					4/06/24
15	MNIST, training a Binary classifier	L+D	BB	1	14	25/05/2024					5/06/24
16	Performance measure	L+D	BB	1	15	31/05/2024					7/06/24
17	Multiclass classification, error analysis, multi label classification, multi output classification	L+D	BB	1	16	3/06/24					8/06/24
18	Tutorial	L+D	BB	2	-	4/06/24 5/06/24					8/06/24

MODULE 3											
19	Training Models: Linear Regression	L+D	BB	1	17	7/06/24					10/06/24
20	Gradient Descent	L+D	BB	1	18	8/06/24					11/06/24
21	Polynomial Regression	L+D	BB	1	19	10/06/24					12/06/24
22	Learning Curves	L+D	BB	1	20	11/06/24					14/06/24
23	Regularized Linear Models	L+D	BB	1	21	12/06/24					24/06/24
24	Logistic Regression	L+D	BB	1	22	14/06/24					25/06/24
25	Support Vector Machine: linear, Nonlinear	L+D	BB	1	23	18/06/24					26/06/24
26	SVM regression and under the hood	L+D	BB	1	24	19/06/24					27/06/24

27	Tutorial		L+D	BB	2	-	21/06/24 22/06/24	27/06/24
MODULE 4								
28	Decision Trees Training and Visualizing DT		L+D	BB+LCD	1	25	24/06/24	28/06/24
29	Making prediction, Estimating class		L+D	BB+LCD	1	26	25/06/24	29/06/24
30	The CART training, Computational Complexity		L+D	BB+LCD	1	27	26/06/24	1/07/24
31	GINI impurity, Entropy		L+D	BB+LCD	1	28	1/07/24	2/07/24
32	Regularization Hyper parameters, Regression, Instability		L+D	BB+LCD	1	29	2/07/24	3/07/24
33	Voting classifiers, Bagging and Pasting		L+D	BB+LCD	1	30	3/07/24	5/07/24
34	Random patches, Random forests		L+D	BB+LCD	1	31	5/07/24	12/07/24
35	Boosting, stacking		L+D	BB+LCD	1	32	8/07/24	13/07/24
36	Tutorial		L+D	BB	2	-	9/07/24 10/07/24	13/07/24
MODULE 5								
37	Bayes Theorem – Concept Learning		L+D	BB+LCD	1	33	12/07/24	15/07/24
38	Maximum Likelihood		L+D	BB+LCD	1	34	13/07/24	16/07/24
39	Minimum Description Length Principle		L+D	BB+LCD	1	35	15/07/24	19/07/24
40	Bayes Optimal Classifier		L+D	BB+LCD	1	36	16/07/24	22/07/24
41	Gibbs Algorithm		L+D	BB+LCD	1	37	19/07/24	23/07/24
42	Naïve Bayes Classifier		L+D	BB+LCD	1	38	26/07/24	24/07/24
43	Example-Bayesian Belief Network		L+D	BB+LCD	1	39	27/07/24	26/07/24
44	EM Algorithm		L+D	BB+LCD	1	40	29/07/24	26/07/24

45	Revision	L+D	BB	1	-	30/07/24 31/07/24	27/07/24
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	Week	Remarks
Assignment 1	4 th Week - 24/05/2024	Mode of Assignment – Written Assignment
Assignment 2	9 th Week- 26/06/2024	

Total No. of Lecture Hours = 40
Total No. of Tutorial Hours = 7



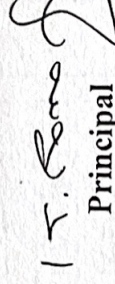
Course In charge



IQAC Coordinator



HOD



Principal

HOD
Dept. of Artificial Intelligence & Data Science
K.S. School of Engineering & Management,
Bangalore - 560 109.



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SESSION: 2023-2024 (EVEN SEMESTER)

LESSON PLAN

NAME OF THE STAFF : Dr. VINUTHA S.V.

COURSE CODE/TITLE : BCS405A / DISCRETE MATHEMATICAL STRUCTURES

SEMESTER/SEC/YEAR : IV /CSBS/ II

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE 1							
1	Fundamentals of Logic: Basic Connectives and Truth Tables	L+PS	BB	1	1	22-04-2024	22-4-2024
2	Logic Equivalence –The Laws of Logic	L+PS	BB	1	2	23-04-2024	23-4-2024
3	Logic Equivalence –The Laws of Logic cont...	L+PS	BB	1	3	25-04-2024	25-4-2024
4	Logical Implication – Rules of Inference	L+PS	BB	1	4	29-04-2024	27-4-2024
5	Fundamentals of Logic contd.:	L+PS	BB	1	5	30-04-2024	29-4-2024, 30/4
6	The Use of Quantifiers	L+PS	BB	1	6	02-05-2024	2-5-2024
7	Quantifiers	L+PS	BB	1	7	03-05-2024	3-5-2024
8	Definitions and the Proofs of Theorems	L+PS	BB	1	8	06-05-2024	13-5-2024
9	Tutorial	L+PS	BB	0	8	07-05-2024	14-5-2024
10	Tutorial	L+PS	BB	0	8	09-05-2024	16-5-2024
11	Tutorial	L+PS	BB	0	8	11-05-2024	17-5-2024
MODULE 2							
12	Relations and Functions: Cartesian Products and Relations	L+PS	BB	1	9	13-05-2024	20-5-2024
13	Functions – Plain and One to-One, Onto Functions	L+PS	BB	1	10	14-05-2024	21-5-2024
14	The Pigeon-hole Principle, Function Composition and Inverse Functions	L+PS	BB	1	11	16-05-2024	23-5-2024
15	Relations contd.: Properties of Relations	offline	Group Discussion	1	12	17-05-2024	24-5-2024

16	Computer Recognition – Zero-One Matrices and Directed Graphs	L+PS	BB	1	13	23-05-2024	25-5-2024
17	Computer Recognition – Zero-One Matrices and Directed Graphs	L+PS	BB	1	14	24-05-2024	28-5-2024
18	Partial Orders – Hasse Diagrams,	L+PS	BB	1	15	25-05-2024	28-5-2024
19	Equivalence Relations and Partitions	L+PS	BB	1	16	27-05-2024	5-6-2024
20	Tutorial	L+PS	BB	0	16	28-05-2024	6-6-2024
21	Tutorial	L+PS	BB	0	16	30-05-2024	7-6-2024
22	Tutorial	L+PS	BB	0	16	31-05-2024	8-6-2024
MODULE 3							
24	Properties of the Integers: The Well Ordering Principle – Mathematical Induction	L+PS	BB	1	17	3-06-2024	10-6-2024
25	The Well Ordering Principle– Mathematical Induction contd.,	L+PS	BB	1	18	4-06-2024	11-6-2024
26	The Well Ordering Principle – Mathematical Induction contd.,	L+PS	BB	1	19	6-06-2024	13-6-2024
27	Fundamental Principles of Counting: The Rules of Sum and Product	L+PS	BB	1	20	7-06-2024	14-6-2024
28	Permutations	L+PS	BB	1	21	8-06-2024	24-6-2024
29	Combinations	L+PS	BB	1	22	10-06-2024	25-6-2024
30	The Binomial Theorem	L+PS	BB	1	23	11-06-2024	26-6-2024
31	Combinations with Repetition	L+PS	BB	1	24	13-06-2024	27-6-2024
32	Tutorial	L+PS	BB	0	24	14-06-2024	28-6-2024
33	Tutorial	L+PS	BB	0	24	18-06-2024	03-7-2024
34	Tutorial	L+PS	BB	0	24	20-06-2024	03-7-2024
MODULE 4							
37	The Principle of Inclusion and Exclusion: The Principle of Inclusion and Exclusion	L+PS	BB	1	25	21-06-2024	4-7-2024
38	Generalizations of the Principle	L+PS	BB	2	27	27-06-2024 28-06-2024	5-7-2024
39	Derangements – Nothing is in its Right Place	L+PS	BB	1	28	29-06-2024	8-7-2024
40	Rook Polynomials	L+PS	BB	1	29	01-07-2024	11-7-2024
41	Recurrence Relations: First Order Linear Recurrence Relation	L+PS	BB	2	31	02-07-2024 04-07-2024	12-7-2024
42	The Second Order Linear Homogeneous	L+PS	BB	1	32	05-07-2024	12-7-2024


	Recurrence Relation with Constant Coefficients						
43	Tutorial	L+PS	BB	0	32	08-07-2024	13-7-2024
44	Tutorial	L+PS	BB	0	32	09-07-2024	15-7-2024
45	Tutorial	L+PS	BB	0	32	11-07-2024	16-7-2024
MODULE 5							
48	Introduction to Groups Theory: Definitions and examples of Particular Groups Klein 4-group, and	L+PS	BB	1	33	12-07-2024	17-7-2024
49	Additive group of Integers modulo n,	L+PS	BB	2	35	13-07-2024	18-7-2024
50	Multiplicative group of Integers modulo p	L+PS	BB	2	37	15-07-2024	19-7-2024
51	permutation groups,	L+PS	BB	1	38	16-07-2024	22-7-2024
52	Properties of groups, subgroups	L+PS	BB	1	39	18-07-2024	22-7-2024
53	Cyclic groups, Cosets, Lagrange's Theorem	L+PS	BB	1	40	19-07-2024	23-7-2024
54	Tutorial	L+PS	BB	0	40	22-07-2024	25-7-2024
55	Tutorial	L+PS	BB	0	40	23-07-2024	26-7-2024
58	Revision	L+PS	BB	0	40	25-07-2024	26-7-2024
59	Revision	L+PS	BB	0	40	26-07-2024	27-7-2024
60	Revision	L+PS	BB	0	40	06-08-2024	27-7-2024


	Mode of Assignment	Date
Assignment 1	<p>Problem Solving</p> <p>Note: students will be given with a set of problem statements and work on the problems in group Problems will be from Module 1 and Module 2</p> <ul style="list-style-type: none"> ● Truth Tables ● Logic Equivalence –The Laws of Logic ● Logical Implication – Rules of Inference ● Quantifiers ● Mathematical Induction 	07/5/2024
Assignment 2	<p>Problem Solving</p> <p>Note: students will be given with a set of problem statements and work on the problems in group Problems will be from Module 2 and Module 3</p> <ul style="list-style-type: none"> ● Permutations ● Combinations ● The Binomial Theorem ● Relations and Functions 	19/6/2024
Assignment 3	<p>Problem Solving</p> <p>Note: students will be given with a set of problem statements and work on the problems in group Problems will be from Module 4 and Module 5</p> <ul style="list-style-type: none"> ● Principle of Inclusion and Exclusion ● Derangements ● Rook Polynomials ● Recurrence Relation ● Group theory ● Solving two model question Paper 	18/7/2024
QUIZ	Online	26/7/2024


Total No. of Lecture Hours = 40

Total No. of Tutorial Hours = 14

Total No. of Revision Hours = 03


Course in charge


Head of the Department
HOD
DEPARTMENT OF
COMPUTER SCIENCE AND BUSINESS SYSTEMS
K.S. SCHOOL OF ENGINEERING AND MANAGEMENT
BENGALURU-560109


Principal
Dr. K. RAMA NARASIMHA
Principal/Director
K S School of Engineering and Management
Bengaluru - 560 109



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SESSION: 2023-24 (EVEN SEMESTER)

LESSON PLAN

NAME OF THE STAFF : R S Geethanjali

COURSE CODE/TITLE : 18CS81/ INTERNET OF THINGS

SEMESTER/YEAR : VIII/IV

MODULE I: Introduction

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Engaged Date
1	What is IoT, Genesis of IoT	L+D	BB+LCD	1	1	12/02/2024	
2	IoT and Digitization, IoT Impact	L+D	BB+LCD	1	2	12/02/2024	
3	Convergence of IT and IoT, IoT Challenges	L+D	BB+LCD	1	3	13/02/2024	
4	IoT Network Architecture and Design Behind New Network Architectures	L+D	BB+LCD	1	4	13/02/2024	
5	Comparing IoT Architectures	L+D	BB+LCD	1	5	19/02/2024	
6	A Simplified IoT Architecture	L+D	BB+LCD	1	6	19/02/2024	
7	The Core IoT Functional Stack	L+D	BB+LCD	1	7	20/02/2024	
8	IoT Data Management and Compute Stack	L+D	BB+LCD	1	8	20/02/2024	

9	Revision	L+D	BB+LCD	0	8	24/02/2024	
MODULE 2: Smart Objects							
10	The "Things" in IoT, Sensors, Actuators	L+D	BB+LCD	1	9	24/02/2024	
11	Smart Objects, Sensor Networks	L+D	BB+LCD	1	10	26/02/2024	
12	Assignment-1: Written Assignment	Offline	Assignment Book	0	10	26/02/2024	
13	Connecting Smart Objects	L+D	BB+LCD	1	11	27/02/2024	
14	Communications Criteria	L+D	BB+LCD	1	12	27/02/2024	
15	IEEE 802.15.4, Standardization and Alliances Physical Layer, MAC Layer Topology, Security	L+D	BB+LCD	1	13	04/03/2024	
16	Revision	L+D	BB+LCD	0	13	04/03/2024	
17	IEEE 802.15.4g and 802.15.4e, Conclusions IEEE 1901.2a, Standardization and Alliances, Physical Layer, MAC Layer Topology, Security	L+D	BB+LCD	1	14	05/03/2024	
18	IEEE 802.11ah, Standardization and Alliances Physical Layer, MAC Layer, Topology, Security	L+D	BB+LCD	1	15	05/03/2024	
19	LoRa WAN, Standardization and Alliances Physical Layer, MAC Layer, Topology, Security	L+D	BB+LCD	1	16	09/03/2024	
20	Revision	L+D	BB+LCD	0	16	09/03/2024	
MODULE 3: IP as the IoT Network Layer							
21	The Business Case for IP	L+D	BB+LCD	1	17	18/03/2024	
22	The need for Optimization	L+D	BB+LCD	1	18	18/03/2024	

23	Optimizing IP for IoT	L+D	BB+LCD	1	19	19/03/2024	
24	Profiles and Compliances	L+D	BB+LCD	1	20	19/03/2024	
25	Application Protocols for IoT	L+D	BB+LCD	1	21	25/03/2024	
26	The Transport Layer, Application Layer Protocol Not Present, SCADA, A Little Background on SCADA	L+D	BB+LCD	1	22	25/03/2024	
27	Revision	L+D	BB+LCD	0	22	26/03/2024	
28	Assignment 2: Written Assignment	Offline	Assignment Book	0	22	26/03/2024	
29	Adapting SCADA for IP,Tunneling Legacy SCADA over IP Networks,SCADA Protocol Translation, SCADA Transport over LNs with MAP-T	L+D	BB+LCD	1	23	30/03/2024	
30	Generic Web-Based Protocols, IoT Application Layer Protocols, CoAP, Message Queuing Telemetry Transport (MQTT)	L+D	BB+LCD	1	24	30/03/2024	
31	Revision	L+D	BB+LCD	0	24	01/04/2024	
MODULE 4: Data and Analytics for IoT							
32	An Introduction to Data Analytics for IoT, Machine Learning	L+D	BB+LCD	1	25	01/04/2024	
33	Big Data Analytics Tools and Technology, Edge Streaming Analytics	L+D	BB+LCD	1	26	02/04/2024	
34	Network Analytics, Securing IoT	L+D	BB+LCD	1	27	02/04/2024	
35	A Brief History of OT Security	L+D	BB+LCD	1	28	13/04/2024	

36	Revision	L+D	BB+LCD	0	28	13/04/2024
37	Common Challenges in OT Security	L+D	BB+LCD	1	29	15/04/2024
38	How IT and OT Security Practices and Systems Vary	L+D	BB+LCD	1	30	15/04/2024
39	Formal Risk Analysis Structures: OCTAVE and FAIR	L+D	BB+LCD	1	31	16/04/2024
40	The Phased Application of Security in an Operational Environment	L+D	BB+LCD	1	32	16/04/2024
41	Revision	L+D	BB+LCD	0	32	22/04/2024
MODULE 5 : IoT Physical Devices and Endpoints						
42	Arduino UNO: Introduction to Arduino, Arduino UNO, Installing the Software, Fundamentals of Arduino Programming	L+D	BB+LCD	1	33	22/04/2024
43	IoT Physical Devices and Endpoints - RaspberryPi: Introduction to RaspberryPi	L+D	BB+LCD	1	34	23/04/2024
44	Assignment-3: Written Assignment	Offline	Assignment Book	0	34	23/04/2024
45	About the RaspberryPi Board: Hardware Layout, Operating Systems on RaspberryPi,	L+D	BB+LCD	1	35	29/04/2024
46	Configuring RaspberryPi, Programming RaspberryPi with Python, Wireless Temperature Monitoring System Using Pi	L+D	BB+LCD	1	36	29/04/2024
47	Revision	L+D	BB+LCD	0	36	30/04/2024
48	DS18B20 Temperature Sensor, Connecting Raspberry Pi via SSH, Accessing Temperature from	L+D	BB+LCD	1	37	30/04/2024

	DS18B20 sensors, Remote access to Raspberry Pi							
49	Smart and Connected Cities, An IoT Strategy for Smarter Cities	L+D	BB+LCD	1	38	06/05/2024		
50	Smart City IoT Architecture	L+D	BB+LCD	1	39	06/05/2024		
51	Smart City Use-Case Examples	L+D	BB+LCD	1	40	07/05/2024		
52	Revision	L+D	BB+LCD	0	40	07/05/2024		

Total No. of Lecture Hours = 40

Total No. of Revision Hours = 09

	Mode of Assignment and Instructions	Date
Assignment 1	Written Assignment - Module 1 and Module 2 <ul style="list-style-type: none"> • Genesis of IoT • IoT Challenges • A Simplified IoT Architecture • IoT Data Management and Compute Stack • Smart Objects, Sensor Networks, Connecting Smart Objects 	26/02/2024
Assignment 2	Written Assignment - Module 2 and Module 3 <ul style="list-style-type: none"> • IEEE 802.15.4, Standardization and Alliances Physical Layer, MAC Layer Topology, Security • Application Protocols for IoT • Adapting SCADA for IP • CoAP, MQTT 	26/03/2024

Assignment 3	Written Assignment - Module 4 and Module 5 <ul style="list-style-type: none"> • An Introduction to Data Analytics for IoT • Network Analytics, Securing IoT • Introduction to Arduino UNO • Raspberry/Pi Board • Smart City Use-Case Examples 	23/04/2024
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R. S. Gaekwad
 Course in charge

[Signature]
 Head of the Department
 HOD

Department of Computer Science Engineering
 K S School of Engineering & Management
 Bangalore-560109

[Signature]
 Principal

Dr. K RAMA NARASIMHA
 Principal/Director
 K S School of Engineering and Management
 Bengaluru - 560 109



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109

DEPARTMENT OF CIVIL ENGINEERING

SESSION: 2023-2024 (EVEN SEMESTER)

LESSON PLAN

NAME OF THE STAFF : Dr. AMRUTHA DHIRAJ

COURSE CODE/TITLE : BCV401/ ANALYSIS OF STRUCTURES

SEMESTER/YEAR : IV / II

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE 1							
1	Module 1: Introduction and Analysis of Plane Trusses: Structural forms, Conditions of equilibrium.	L+D	BB	1	1	22/04/2024	22/4/2024
2	Tutorials	L+D	BB	0	0	23/04/2024	23/4/2024
3	Compatibility conditions, Degree of freedom, Linear and nonlinear analysis.	L+D	BB	2	3	25/04/2024	25/4/2024
4	Static and kinematic indeterminacies of structural systems, Types of trusses, Assumptions in analysis.	L+D, PS	BB	1	4	29/04/2024	29/4/2024
5	Tutorials	L+D, PS	BB	0	4	30/04/2024	30/4/2024
6	Analysis of determinate trusses by method of joints.	L+D, PS	BB	2	6	02/05/2024	2/5/2024
7	Analysis of determinate trusses by method of sections.	L+D, PS	BB	1	7	06/05/2024	13/5/2024
8	Tutorials	L+D, PS	BB	0	7	07/05/2024	14/5/2024
9	Analysis of determinate trusses by method of sections.	L+D, PS	BB	1	8	09/05/2024	16/5/2024

MODULE 2

10	Module 2: Arches and Cable Structures: Three hinged parabolic arches with supports at the same levels. Determination of normal thrust, radial shear and bending moment.	L+D, PS	BB	1	9	09/05/2024	20/5/2024
11	Three hinged parabolic arches with supports at the same levels. Determination of normal thrust, radial shear and bending moment.	L+D, PS	BB	1	10	13/05/2024	21/5/2024
12	Tutorials	L+D, PS	BB	0	10	14/05/2024	21/5/2024
13	Three hinged parabolic arches with supports at different levels. Determination of normal thrust, radial shear and bending moment.	L+D, PS	BB	2	12	16/05/2024	23/5/2024
14	Analysis of cables under point loads and UDL. Length of cables for supports at same levels.	L+D, PS	BB	2	14	23/05/2024	27/5/2024
15	Analysis of cables under point loads and UDL. Length of cables for supports at same levels.	L+D, PS	BB	1	15	25/05/2024	6/6/2024
16	Analysis of cables under point loads and UDL. Length of cables for supports at different levels- Stiffening trusses for suspension cables.	L+D, PS	BB	1	16	27/05/2024	10/6/2024

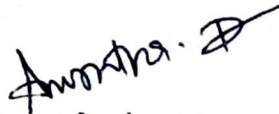
MODULE 3

17	Tutorials	L+D	BB	0	16	28/05/2024	11/6/2024
18	Module 3: Slope Deflection Method: Introduction, sign convention, development of slope deflection equation.	L+D	BB	2	18	30/05/2024	12/6/2024
19	Analysis of continuous beams.	L+D, PS	BB	1	19	03/06/2024	13/6/2024
20	Tutorials	L+D, PS	BB	0	19	04/06/2024	18/6/2024
21	Analysis of continuous beams including settlement of supports.	L+D, PS	BB	2	21	06/06/2024	20/6/2024

22	Analysis of continuous beams including settlement of supports.	L+D, PS	BB	1	22	08/06/2024	24/6/2024
23	Analysis of orthogonal rigid plane frames with kinematic indeterminacy up to 3.	L+D, PS	BB	1	23	10/06/2024	25/6/2024
24	Tutorials	L+D, PS	BB	0	23	11/06/2024	25/6/2024
25	Analysis of orthogonal rigid plane frames including sway frames with kinematic indeterminacy up to 3.	L+D, PS	BB	1	24	13/06/2024	27/6/2024
MODULE 4							
26	Module 4: Moment Distribution Method: Introduction, Definition of terms, Development of method.	L+D	BB	1	25	13/06/2024	17/7/2024
27	Tutorials	L+D, PS	BB	0	25	18/06/2024	21/7/2024
28	Analysis of continuous beams with support yielding.	L+D, PS	BB	1	26	20/06/2024	4/7/2024
29	Analysis of continuous beams with support yielding.	L+D, PS	BB	2	28	27/06/2024	11/7/2024
30	Tutorials	L+D, PS	BB	0	28	29/06/2024	15/7/2024
31	Analysis of orthogonal rigid plane frames with kinematic indeterminacy up to 3.	L+D, PS	BB	1	29	01/07/2024	16/7/2024
32	Tutorials	L+D, PS	BB	0	29	02/07/2024	16/7/2024
33	Analysis of orthogonal rigid plane frames including sway frames with kinematic indeterminacy up to 3.	L+D, PS	BB	2	31	04/07/2024	18/7/2024
34	Analysis of orthogonal rigid plane frames including sway frames with kinematic indeterminacy up to 3.	L+D, PS	BB	1	32	08/07/2024	19/7/2024
MODULE 5							
51	Tutorials	L+D	BB	0	32	09/07/2024	19/7/2024
52	Module 5: Deflection of Beams: Moment area method: Derivation, Mohr's theorems, sign convention; Application of moment area method to determinate prismatic beams.	L+D, PS	BB	2	34	11/07/2024	22/7/2024
53	Application of moment area method to determinate beams of varying cross section; Use of moment diagram by parts.	L+D, PS	BB	1	35	15/07/2024	23/7/2024

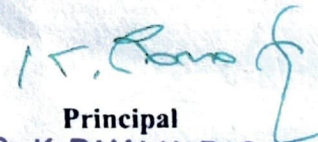
54	Tutorials	L+D, PS	BB	0	35	16/07/2024	23/7/2024
55	Strain Energy: Principle of virtual displacements, Principle of virtual forces.	L+D	BB	2	37	18/07/2024	25/7/2024
56	Strain energy due to axial force, bending, shear and torsion (No numerical).	L+D	BB	1	38	22/07/2024	27/7/2024
57	Tutorials	L+D, PS	BB	0	38	23/07/2024	29/7/2024
58	Castigliano's theorems, application of Castigliano's theorems to calculate deflection of beams, trusses and frames (No numerical on unit load method).	L+D, PS	BB	2	40	25/07/2024	30/7/2024

Total No. of Lecture Hours = 40; Total No. of Tutorial Hours = 24


Course In charge


Head of Dept.
Professor & Head
Dept. of Civil Engineering
K.S. Group of Institutions
K.S. School of Engineering & Management
Bangalore-560 062.


IQAC Coordinator


Principal
Dr. K. RAMA NARASIMHA
Principal/Director
K S School of Engineering and Management
Bangalore - 560 109



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
SESSION: 2023-2024 (EVEN SEMESTER)
LESSON PLAN

NAME OF THE STAFF : Dr. MANU D K
COURSE CODE/TITLE : BEC402 / PRINCIPLES OF COMMUNICATION SYSTEMS
SEMESTER/YEAR : IV 'B'/II

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE 1							
1	Module2: Amplitude Modulation Fundamentals: AM Concepts,	L	BB	1	1	22/04/2024	22/04/24
2	Modulation index and Percentage of Modulation, Sidebands and the frequency domain	L	BB	1	2	24/04/2024	25/04/24
3	AM Power, Single Sideband Modulation.	L	BB	1	3	25/04/2024	25/04/24
4	AM Circuits: Amplitude Modulators: Diode Modulator	L	BB	1	4	27/04/2024	25/04/24
5	Transistor Modulator, collector Modulator.	L	BB	1	5	29/04/2024	29/04/24
6	Amplitude Demodulators: Diode Detector,.	L	BB	1	6	02/05/2024	02/05/24
7	Balanced Modulators: Lattice Modulators	L	BB	1	7	03/05/2024	12/05/24
8	Frequency Division Multiplexing: Transmitter-Multiplexer, Receiver-Demultiplexer.	L	BB	1	8	06/05/2024	15/05/24
9	Module3: Fundamentals of Frequency Modulation: Basic Principles of Frequency Modulation	L	BB	1	9	08/05/2024	16/05/24

10	Principles of Phase Modulation, Modulation index and sidebands	L	BB	1	10	09/05/2024	17/05/24
11	Noise Suppression Effects of FM	L	BB	1	11	11/05/2024	20/05/24
12	Frequency Modulation versus Amplitude Modulation.	L	BB	1	12	13/05/2024	22/05/24
13	FM Circuits: Frequency Modulators: Voltage Controlled Oscillators.	L	BB	1	13	15/05/2024	23/05/24
14	Frequency Demodulators: Slope Detectors, Phase Locked Loops.	L	BB	1	14	16/05/2024	24/05/24
15	Communication Receiver: Super heterodyne receiver	L	BB	1	15	17/05/2024	25/05/24
16	Frequency Conversion: Mixing Principles, JFET Mixer.	L	BB	1	16	23/05/2024	29/05/24
17	Module4: Digital Representation of Analog Signals: Introduction, Why Digitize Analog Sources?	L	BB	1	17	24/05/2024	05/06/24
18	The Sampling process, Pulse Amplitude Modulation,	L	BB	1	18	25/05/2024	06/06/24
19	Time-Division Multiplexing	L	BB	1	19	27/05/2024	07/06/24
20	Pulse Position Modulation: Generation and Detection of PPM wave.	L	BB	1	20	29/05/2024	10/06/24
21	The Quantization Process.	L	BB	1	21	30/05/2024	12/06/24
22	Pulse Code Modulation: Sampling, Quantization, Encoding	L	BB	1	22	31/05/2024	13/06/24
23	line Codes	L	BB	1	23	03/06/2024	24/06/24
24	Differential encoding, Regeneration, Decoding, filtering, multiplexing.	L	BB	1	24	05/06/2024	26/06/24
25	Module5: Baseband Transmission of Digital signals: Introduction, Intersymbol Interference	L	BB	1	25	07/06/2024	27/06/24
26	Eye Pattern, Nyquist criterion for distortion less	L	BB	1	26	08/06/2024	28/06/24

27	Transmission, Baseband M-ary PAM Transmission.	L	BB	1	27	10/06/2024	01/07/24
28	Noise: Signal to Noise Ratio	L	BB	1	28	12/06/2024	07/07/24
29	External Noise, Internal Noise	L	BB	1	29	13/06/2024	05/07/24
30	Semiconductor Noise	L	BB	1	30	14/06/2024	11/07/24
31	Expressing Noise Levels	L	BB	1	31	19/06/2024	12/07/24
32	Noise in Cascade Stages.	L	BB	1	32	20/06/2024	18/07/24
33	Module1: Random Variables and Processes: Introduction, Probability	L	BB	1	33	22/06/2024	19/07/24
34	Conditional Probability, Random variables	L	BB	1	34	27/06/2024	19/07/24
35	Statistical Averages: Function of a random variable, Moments	L	BB	1	35	28/06/2024	21/07/24
36	Random Processes, Mean, Correlation and	L	BB	1	36	01/07/2024	22/07/24
37	Covariance function: Properties of autocorrelation function	L	BB	1	37	03/07/2024	25/07/24
38	Cross-correlation functions	L	BB	1	38	04/07/2024	25/07/24
39	Gaussian Process	L	BB	1	39	05/07/2024	26/07/24
40	Gaussian Distribution Function	L	BB	1	40	08/07/2024	27/07/24
41	Revision	L	BB	-	40	10/07/2024	
42	Revision	L	BB	-	40	11/07/2024	
43	Revision	L	BB	-	40	12/07/2024	
44	Revision	L	BB	-	40	13/07/2024	
45	Revision	L	BB	-	40	15/07/2024	
46	Revision	L	BB	-	40	18/07/2024	
47	Revision	L	BB	-	40	19/07/2024	
48	Revision	L	BB	-	40	22/07/2024	


49	Revision	L	BB	-	40	24/07/2024	
50	Revision	L	BB	-	40	25/07/2024	
51	Revision	L	BB	-	40	26/07/2024	
52	Revision	L	BB	-	40	27/07/2024	
53	Revision	L	BB	-	40	07/08/2024	
Practical Part							
1	Basic Signals and Signal Graphing: a) unit Step, b) Rectangular, c) standard triangle d) sinusoidal and e) Exponential signal.	L+D	BB+PPT	1	1	30/04/2024	
2	Illustration of signal representation in time and frequency domains for a rectangular pulse.	L+D	BB+PPT	1	2	07/05/2024	
3	Amplitude Modulation and demodulation: Generation and display the relevant signals and its spectrums.	L+D	BB+PPT	1	3	14/05/2024	
4	Frequency Modulation and demodulation: Generation and display the relevant signals and its spectrums.	L+D	BB+PPT	1	4	28/05/2024	
5	Sampling and reconstruction of low pass signals. Display the signals and its spectrum.	L+D	BB+PPT	1	5	04/06/2024	
6	Time Division Multiplexing and Demultiplexing.	L+D	BB+PPT	1	6	06/06/2024	
7	PCM Illustration: Sampling, Quantization and Encoding	L+D	BB+PPT	1	7	11/06/2024	
8	Generate a) NRZ, RZ and Raised cosine pulse, b) Generate and plot eye diagram.	L+D	BB+PPT	1	8	18/06/2024	

9	Generate the Probability density function of Gaussian distribution function.	L+D	BB+PPT	1	9	21/06/2024	
10	Display the signal and its spectrum of an audio signal.	L+D	BB+PPT	1	10	29/06/2024	
11	Practical	L+D	BB+PPT	1	11	02/07/2024	
12	Practical	L+D	BB+PPT	1	12	09/07/2024	
13	Practical	L+D	BB+PPT	1	13	16/07/2024	
14	Practical	L+D	BB+PPT	1	14	23/07/2024	

	Week	Remarks
Assignment 1	Assignment Questions and Answer: A total of 05 Assignment questions will be given from CO1 and CO2 to submit the descriptive answer in assignment book.	13-05-2024
Assignment 2	Assignment Questions and Answer: A total of 05 Assignment questions will be given from CO2 and CO3 to submit the descriptive answer in assignment book.	10-06-2024
Assignment 3	Assignment Questions and Answer: A total of 05 Assignment questions will be given from CO4 and CO5 to submit the descriptive answer in assignment book.	05-07-2024

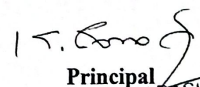
Total No. of Lecture Hours: 40

Total No. of Practical Hours: 14


Course In charge


Head of Dept
Professor & Head
Dept. of Electronics & Communication Engineering
K.S. School of Engineering & Management
Bangalore - 560 109


IQAC Coordinator


Principal
Dr. K. RAMA NARASIMH
Principal/Director
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Bangaluru - 560 109



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BANGALORE - 560109

DEPARTMENT OF MECHANICAL ENGINEERING

SESSION: 2023-2024(EVEN SEMESTER)

LESSON PLAN

NAME OF THE STAFF : Dr. P N Jyothi

SUBJECT CODE/TITLE : 21ME61/ PRODUCTION & OPERATIONS MANAGEMENT

SEMESTER/YEAR : VI SEM /III YEAR

SL No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE I							
1	Introduction, Production of Goods Versus Providing Services, Operation management function, The Scope of Operations Management	L	BB+LCD	1	1	29/4/24	29/4/24
2	Types and Characteristics of Manufacturing and Service Systems, Productivity, its improvement and factors affecting productivity	L	BB+LCD	1	2	30/4/24	6/5/24
3	Numericals on Productivity	L	BB+LCD	1	3	3/5/24	8/5/24
4	Operations Decision Making: Characteristics of Decisions, Framework for Decision Making, Decision Methodology, decision making environments	L	BB+LCD	1	4	6/5/24	9/5/24

5	Economic Models and Statistical Models. Introduction to Breakeven- analysis and trade-offs.	L+PS	BB	1	5	7/5/24	11/5/24
6	Numericals on Breakeven- analysis.	L+PS	BB	1	6	8/5/24	13/5/24
7	Numericals on Breakeven- analysis	L+PS	BB	1	7	11/5/24	14/5/24
8	Numericals on trade-offs	L+PS	BB	1	8	13/5/24	15/5/24
9	Class test / Activity-1	L+PS	BB	1	9	14/5/24	16/5/24
MODULE 2							
10	Forecasting: Steps in forecasting process, Approaches to forecasting	L	BB+LCD	1	10	15/5/24	20/5/24
11	Forecasts based on judgment Analysis , Forecasts based on opinion Analysis	L	BB+LCD	1	11	17/5/24	20/5/24 22/5/24
12	Numerical Problems -Time Series Method	L	BB+LCD	1	12	20/5/24	23/5/24
13	Numerical Problems-Method of least Squares	L	BB+LCD	1	13	21/5/24	24/5/24
14	Numerical Problems-Regression and correlation Method	L+PS	BB	1	14	22/5/24	25/5/24
15	Numerical Problems-Exponential smoothing	L+PS	BB	1	15	24/5/24	27/5/24
16	Numericals on Accuracy and Control of Forecasts	L+PS	BB	1	16	25/5/24	28/5/24
17	Introduction, Sources of Ideas for New or Redesigned Products and Services	L	BB+LCD	1	17	31/5/24	4/6/24
18	Legal, Ethical, and Environmental Issues, Designing for Manufacturing, and services.	L	BB+LCD	1	18	3/6/24	4/6/24
19	Class test / Activity-2	L+PS	BB	1	19	4/6/24	5/6/24

MODULE 3

20	Capacity & Location Planning: Importance of capacity decisions, defining and measuring capacity	L	BB+LCD	1	20	5/6/24	7/6/24
21	Determinants of effective capacity, determining capacity requirement, Developing capacity alternatives , Evaluating alternatives	L	BB+LCD	1	21	7/6/24	13/6/24
22	Need for location decisions, nature of locations decisions, General Procedure for Making Location Decisions	L	BB+LCD	1	22	8/6/24	24/6/24
23	Facility Layout: Designing Product Layouts: Line Balancing ,Designing Process Layouts	L	BB+LCD	1	23	10/6/24	25/6/24
24	Numericals	L+PS	BB	1	24	11/6/24	26/6/24
25	Numericals	L+PS	BB	1	25	12/6/24	26/6/24
26	Numericals	L+PS	BB	1	26	14/6/24	28/6/24
27	Class test / Activity-3	L+D	BB+LCD	1	27	18/6/24	28/6/24

MODULE 4

28	Aggregate Planning: Introduction, The Purpose and Scope of Aggregate Planning Basic Strategies for Meeting Uneven Demand	L+D	BB+LCD	1	28	19/6/24	21/7/24
29	Techniques for Aggregate Planning, Aggregate Planning in Service, Disaggregating the Aggregate Plan	L	BB+LCD	1	29	21/6/24	31/7/24
30	Numericals	L	BB+LCD	1	30	22/6/24	31/7/24

31	The Master Scheduling Process flow chart	L	BB+LCD	1	31	24/6/24	3/7/24
32	Planning Horizons, Master Scheduling Format, Available-to-Promise Quantities and related numerical	L	BB+LCD	1	32	25/6/24	5/7/24
33	Numericals on MPS	L+ PS	BB	1	33	26/6/24	5/7/24
34	Numericals on MPS	L+ PS	BB	1	34	1/7/24	16/7/24
35	Numericals on MPS	L+ PS	BB	1	35	2/7/24	16/7/24
36	Class test / Activity-4	L	BB	1	36	3/7/24	16/7/24
MODULE 5							
37	Material Requirement Planning (MRP): Dependent versus independent demand, an overview of MRP – MRP inputs and outputs	L	BB+LCD	1	37	5/7/24	18/7/24
38	MRP processing, Benefits and limitations of MRP	L	BB+LCD	1	38	8/7/24	18/7/24
39	Numericals on MRP	L	BB	1	39	9/7/24	19/7/24
40	ERP capacity requirement planning	L+ PS	BB	1	40	10/7/24	19/7/24
41	Material Requirement Planning (MRP) problems	L	BB+LCD	1	41	12/7/24	22/7/24
42	Purchasing and Supply Chain Management (SCM): Introduction, Importance of purchasing and SCM	L	BB+LCD	1	42	13/7/24	23/7/24
43	The procurement Process, Concept of tenders,	L	BB+LCD	1	43	15/7/24	24/7/24
44	Approaches to SCM, Vendor development	L	BB+LCD		44	16/7/24	24/7/24
45	Class test / Activity-4	L+ D	BB+LCD	1	45	19/7/24	24/7/24

Total No of Lecturer Hours=40

Total No of Activity & Tutorial Hours= 5

Total 20 Marks	Mode of Assignment and instructions*	Date
Assignment 1 10M	<ul style="list-style-type: none">• Need to write answers for the Assignment Questions	16/5/24
Assignment 2 10M	<ul style="list-style-type: none">• Need to write answers for the Assignment Questions	19/6/24
4 - Activities Each 5 M= 20M	<ul style="list-style-type: none">• Class Activity -1- Decision Making• Class Activity -2- Need to Solve Numericals on Forecasting• Class Activity -3: Prepare a Product Layout -Case Study• Class Activity -4- Need to solve Numericals on AP/MPS/MRP	01/5/24 4/6/24 18/6/24 3/7/24


Course In charge


Head of the Department


Principal



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109

DEPARTMENT OF APPLIED SCIENCE

SESSION: 2023-2024 (EVEN SEMESTER)

LESSON PLAN



NAME OF THE STAFF : Dr. SUMANTHA H S

COURSE CODE/TITLE : BPHYS202/ APPLIED PHYSICS FOR CSE STREAM

SEMESTER/YEAR : II G / I

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE I							
1	Basic properties of a LASER beam, Interaction of Radiation with Matter: Induced Absorption, Spontaneous Emission and Stimulated Emission, Einstein's A and B Coefficients: Rates of Absorption and emissions, Thermal Equilibrium, Boltzmann Relation, Derivation of Expression for Energy Density.	L+D, I	BB, PPT	1	1	06/03/2024	06/03/24
2	Laser Action Explanation, Population Inversion explanation, Metastable State: Description using 3 level system, Requisites of a laser system: Energy Source, Active Medium, Laser Cavity	L+ I, AV	BB, PPT	1	2	09/03/2024	14/03/24
3	Semiconductor Diode Laser: Principle, Construction, Working, Wavelength, Applications, Applications of LASER: Bar code scanner, Laser Printer, Laser Cooling	L+D, I	BB, PPT	1	3	11/03/2024	14/03/24
4	Numerical Problems: Ratio of Population, Number of photons / secs in a LASER beam of certain power output.	PS	BB	1	4	07/03/2024	13/3/24
5	Principle: Total Internal Reflection, Structure: Core, Clad, Sheath and corresponding Refractive Index, Propagation of Light Through the Optical fiber (Ray Diagram), Acceptance angle and Numerical Aperture (NA) Explanation	L+D, I	BB, PPT	1	5	11/03/2024	15/3/24

6	Derivation of Expression for NA, Modes of Propagation Definition, RI Profile: Graph, Classification of Optical Fibers: Single Mode Step Index and Multi-Mode Step and Graded Index Fibers.	L+I	BB, PPT	1	6	12/03/2024	18/3/24
7	Attenuation, Attenuation Coefficient, Types of Fiber Losses: Absorption, Scattering and Geometrical Losses, Applications: Fiber optic Networking, Communication.	L+I	BB, PPT	1	7	12/03/2024	19/3/24
8	Numerical Problems: Numerical Aperture, Acceptance angle and Attenuation Co-efficient.	PS	BB	1	8	13/03/2024 15/03/2024	20/3/24 23/03/24
9	Tutorials	PS	BB	2	-	18/03/2024	28/3/24
10	Lab Component: Determination of wavelength of LASER using Diffraction Grating. Determination of acceptance angle and numerical aperture of the given Optical Fiber. Study the frequency response of Series & Parallel LCR circuits to understand resonance.	D+E	Experiment al set up.	3	-	G1-07/03/2024 14/03/2024 G2-15/03/2024	07/03/24 14/03/24 15/03/24
MODULE 2							
11	Statement of de-Broglie Hypothesis, Derivation of expression for de Broglie wavelength (λ) by analogy and different forms of expression for (λ)	L+E	BB	1	9	19/03/2024	26/03/24
12	Wave Packets, Wave Velocity and Group Velocity (Definitions and Mention of Expression) Heisenberg's Uncertainty Principle, Nonexistence of electron inside the nucleus (non-relativistic).	L+E	BB	1	10	20/03/2024	27/03/24
13	Principle of Complementarity, Correlation between de Broglie Wavelength, Heisenberg's Uncertainty principle and wave packet, Wave Function, Explanation, General Mathematical Form (Exponential).	L+E	BB	1	11	22/03/2024	29/03/24
14	Schrödinger Time Independent wave definition, Setting up of Time independent Schrodinger wave equation in 1D (derivation) and extension to 3D (mention).	L+E	BB	1	12	23/03/2024	29/03/24
15	Physical Significance of a wave function (Probability Density) and Born Interpretation, Expectation value, Eigen functions and Eigen Values.	L+D, E	BB	1	13	25/03/2024	01/04/24
16	One Dimensional Potential Well Explanation and Boundary conditions, Schrödinger Wave equation for a particle in 1D infinite potential well, General Solution, Applying Boundary Conditions.	L+D	BB	1	14	26/03/2024	12/04/24

17	Energy Eigen Values (Quantization of Energy States), Normalization and Eigen Function, Variation of wave functions and probability density distributions for $n = 1, 2, 3$ states	L+E	BB		1	15	27/03/2024	12/04/24	
18	Numerical Problems on de Broglie Hypothesis, Heisenberg's Uncertainty Principle, Energy Eigen Values for a particle in 1D infinite potential well.	PS	BB		1	16	30/03/2024 01/04/2024	15/4/24	
19	Tutorial	PS	BB		2	-	02/04/2024	18/04/24	
20	Lab Component: Study the Characteristics of a Photo-Diode and to determine the power responsivity Determination of Planck's Constant using LEDs.	D+E	Experiment al set up.		2	-	G1-21/03/2024 28/03/2024 G2-22/03/2024 05/04/2024	21/03/24 28/03/24 22/03/24 05/04/24	
MODULE 3									
21	Introduction to Quantum Computing, Moore's law & its end. Differences between classical & quantum computing.	L+D	BB		1	17	03/04/2024	19/04/24	
22	Concept of qubit and its properties. representation of qubit by Bloch sphere. single and two qubits. Extension to N qubits.	L+D	BB		1	18	05/04/2024	20/04/24	
23	Matrix representation of 0 and 1 States, Identity Operator I, Applying I to $ 0\rangle$ and $ 1\rangle$ states to show there is no change, Pauli Matrices and its operations on 0 and 1 states, Explanation of i) Conjugate of a matrix and ii) Transpose of a matrix.	L+D	BB		1	19	08/04/2024	29/04/24	
24	Unitary Matrix U, Examples: Row and Column Matrices and their multiplication (Inner Product), Probability, and Quantum Superposition, normalization rule. Orthogonality, Orthonormality.	L+D	BB		1	20	10/04/2024	30/04/24	
25	Quantum Not Gate, Pauli - X, Y and Z Gates, Hadamard Gate, Phase Gate (or S Gate), T Gate.	L+D	BB		1	21	12/04/2024	03/05/24	
26	Controlled gate, CNOT Gate, (Discussion for 4 different input states).	L+D	BB		1	22	13/04/2024	11/05/24	
27	Representation of Swap gate, Controlled-Z gate, Toffoli gate.	L+D	BB		1	23	15/04/2024	17/05/24	

28	Identity, Unitary, Inner Product, Orthogonality, Gates: X Gates, Hadamard Gate, CNOT Gate, Relating T and S gates (Standard Forms).	PS	BB	1	24	16/04/2024	14/05/24
29	Tutorial	PS	BB	2	---	17/04/2024 19/04/2024	15/05/24 16/05/24
MODULE 4							
30	(Electrical Conductivity in metals, Resistivity and Mobility) Concept of Phonon, Variation of resistivity with temperature and impurity. Matthiessen's rule. Mention of Failures of Classical Free Electron Theory of Metals.	L+E	BB	1	25	26/04/2024	18/05/24
31	Quantum Free Electron Theory of Metals: Assumptions, Fermi Energy, Definition of Density of states and Fermi Factor. Variation of Fermi Factor with Temperature.	L+E	BB	1	26	27/04/2024	20/05/24
32	Introduction to Super Conductors, Temperature dependence of resistivity mentioning the critical temperature.	L+E, I	BB, PPT	1	27	29/04/2024	20/05/24
33	Meissner's Effect and Explanation. Critical Field, Temperature dependence of Critical field.	L+E, I, AV	BB, PPT	1	28	30/04/2024	21/05/24
34	Types of Super Conductors (Soft-Type1 and Hard-Type2) superconductors explanation with graphs and examples, BCS theory of Superconductivity explanation with the formation of cooper-pairs.	L+E, I, AV	BB, PPT	1	29	03/05/2024	21/05/24
35	High Temperature superconductivity, Quantum Tunneling, Josephson Junctions, DC and AC Josephson Effects (Qualitative)	L+I, E	BB, PPT	1	30	11/05/2024	23/05/24
36	DC and RF Squids (Qualitative), Applications in Quantum Computing: Charge qubit, Phase qubit and Flux qubit (Very brief explanation).	L+E	BB, PPT	1	31	13/05/2024	23/05/24
37	Numerical Problems: Fermi Factor, Critical Field.	PS	BB	1	32	14/05/2024	24/05/24
38	Tutorial	PS	BB	2	--	15/05/2024 17/05/2024	25/05/24

39	<p>Lab Component: Determination of Fermi Energy of Copper. Determination of dielectric constant of the material of capacitor by Charging and Discharging method. Determination of Magnetic Flux Density at any point along the axis of a circular coil. Study the I-V Characteristics of the Given Bipolar Junction Transistor.</p>	D+E	4	Experimental set up.	---	G1-04/04/2024 18/04/2024 25/04/2024 02/05/2024 16/05/2024 G2-05/04/2024 12/04/2024 19/04/2024 26/04/2024 26/04/2024 03/05/2024 17/05/2024	04/06/24 18/04/24 25/04/24 02/05/24 16/05/24 05/06/24 12/06/24 03/05/24 12/05/24 20/05/24
MODULE 5							
40	Introduction, Taxonomy of physics-based animation methods, Frames, Frames per Second, Size and Scale, weight and strength.	L+D, E, I	1	BB, PPT	33	20/05/2024	04/06/24
41	Motion and Timing in Animations: Motion Lines and Paths, Introduction to Motion, Timing Tools, Linear Motion Timing, Uniform Motion Timing, Slow in and Slow out, Constant Force and Acceleration, Forces Exerted by characters.	L+D, I, E	1	BB, PPT	34	21/05/2024	06/06/24
42	The Odd rule: odd rule multipliers, odd rule scenarios (Four Different Scenarios), Motion Graphs.	L+D, I, E	1	BB, PPT	35	22/05/2024	06/06/24
43	Examples of Character Animation: Jumping, Parts of Jump, Calculating Jump Actions, Jump Magnification (JM), Jump Acceleration, Landing.	L+D, I, E	1	BB, PPT	36	24/05/2024	02/06/24
44	Stop time, Walking: Strides and Steps, Walk Timing.	L+D	1	BB, PPT	37	25/05/2024	02/06/24
45	Numerical Problems: Odd rule multipliers and odd rule Scenarios, Jump magnification (JM), Stop time.	E+PS	1	BB	38	27/05/2024	08/06/24
46	Descriptive statistics and inferential statistics, Poisson distribution, Modeling the probability for Proton Decay.	L+D	1	BB, PPT	39	28/05/2024	08/06/24
47	Normal Distributions (Bell Curves) with an example, Monte Carlo	L+D	1	BB, PPT	40	04/06/2024	10/06/24

48	Tutorial	PS	BB	2	---	05/06/2024 07/06/2024	10/06/24
49	Lab Component: Simulation of Total Internal Reflection.	I+E	PHET Interactive Simulation.	1	---	G1-23/05/2024 06/06/2024 G2-24/05/2024 07/06/2024	23/05/24 06/06/24 24/05/24 26/06/24
REVISION							
50	Revision	L+D	BB	0	41	05/06/2024	11/06/24
51	Revision	L+D	BB	0	42	07/06/2024	11/06/24
52	Revision	L+D	BB	0	43	08/06/2024	13/06/24
53	Revision	L+D	BB	0	44	11/06/2024	13/06/24
54	Revision	L+D	BB	0	45	12/06/2024	14/06/24
55	Revision	L+D	BB	0	46	14/06/2024	15/06/24
56	Revision	L+D	BB	0	47	18/06/2024	15/06/24
57	Revision	L+D	BB	0	48	19/06/2024	19/06/24
58	Revision	L+D	BB	0	49	24/06/2024	24/06/24
59	Revision	L+D	BB	0	50	26/06/2024	26/06/24

Mode of Assignments and Instructions		Date
Assignment 1	Assignment questions to be answered -submission of assignment books.	04/04/2024
Assignment 2	Assignment questions to be answered -submission of assignment books.	17/05/2024
Assignment 3	Assignment questions to be answered -submission of assignment books.	21/06/2024

Total No. of Lecture Hours and Lab Hours = 40
 Total No. of Tutorial Hours = 10
 Total Laboratory classes = 12
 Revision = 05

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K. S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109
DEPARTMENT OF MBA
SESSION: 2023-2024 (EVEN SEMESTER)
IV Semester, MBA (Batch: 2022-24)
LESSON PLAN

NAME OF THE STAFF : ARUNDATHI KL
COURSE CODE/TITLE : 22MBABA403/ Machine learning
SEMESTER/YEAR : IV SEMESTER / II YEAR

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	Delivery Date
MODULE 1							
1	Supervised and Unsupervised Learning: Regression and classification models,	L	BB/LCD	1	1	10/6/2024	10/6/24
2	Decision tree, Classification of regression trees,	L+D	BB/LCD	1	2	12/6/2024	11/6/24
3	linear, multiple, logistic regression,	L+D	BB/LCD	1	3	12/6/2024	12/6/24
4	neural networks, multi layer perceptron,	L+D	BB/LCD	1	4	14/6/2024	24/6/24
5	support vector machines, linear and non-linear kernel functions,	L+D	BB/LCD	1	5	18/6/2024	25/6/24
6	introduction to clustering and k model clustering. cases	L+D	BB/LCD	2	7	21 & 24/6/2024	26/6/24
MODULE 2							
7	Decision tree and generic algorithms: Basic decision tree algorithm, information gain, hypothesis space,	L+D+PC	BB/LCD	1	8	25/6/2024	28/6/24
8	inductive bias, issues in decision tree learning,	L+D+PC	BB/LCD	1	9	26/6/2024	1/7/24
9	determining the correct and final tree size, pruning.	L+D+PC	BB/Lab	1	10	28/6/2024	2/7/24

	Genetic Algorithms:						
10	Motivation, Genetic Algorithms: Representing Hypotheses, Genetic Operator,	L+D+PC	BB/Lab	1	11	1/7/2024	3/7/24
11	Fitness Function and Selection, An Illustrative Example, Hypothesis Space Search,	L+D+PC	BB/Lab	1	12	2/7/2024	5/7/24
12	Genetic Programming, Models of Evolution and Learning: Lamarkian Evolution	L+D+PC	BB/Lab	1	13	3/7/2024	8/7/24
13	Baldwin Effect, Parallelizing Genetic Algorithms. cases	L+D+PC	BB/Lab	2	15	5& 12/7/2024	9/7/24
MODULE 3							
14	Ensemble and probabilistic learning: Model Combination Schemes, Voting,	L+D+PC	BB/LCD	1	16	15/7/2024	10/7/24
15	Error-Correcting Output Codes, Bagging: Random Forest Trees,	L+D+PC	BB/LCD	1	17	16/7/2024	12/7/24
16	Boosting: Adaboost, Stacking. Gaussian mixture models	L+D+PC	BB/Lab	1	18	22/7/2024	23/7/24
17	The Expectation-Maximization (EM) Algorithm, Information Criteria	L+D+PC	BB/Lab	1	19	23/7/2024	23/7/24
18	Nearest neighbor methods - Nearest Neighbour Smoothing	L+D+PC	BB/Lab	1	20	24/7/2024	24/7/24
19	Efficient Distance Computations: the KD-Tree,	L+D+PC	BB/Lab	1	21	26/7/2024	26/7/24
20	Distance Measures. cases	L+D+PC	BB/Lab	2	23	29/7/2024	31/7/24
MODULE 4							
21	Reinforcement Learning and Evaluating Hypotheses	L+D+PC	BB/LCD	1	24	2/8/2024	5/8/24
22	Learning Task, Q Learning, Non deterministic Rewards and actions	L+D+PC	BB/Lab	1	25	9/8/2024	6/8/24
23	temporal-difference learning, Relationship to Dynamic Programming,	L+D+PC	BB/Lab	1	26	12/8/2024	7/8/24
24	Active reinforcement learning, Generalization in reinforcement learning.	L+D+PC	BB/Lab	1	27	13/8/2024	12/8/24

25	Motivation, Basics of Sampling Theory:	L+D+PC	BB/Lab	1	28	14/8/2024	12/8/24
26	Error Estimation and Estimating Binomial Proportions,	L+D+PC	BB/Lab	1	29	16/8/2024	16/8/24
27	The Binomial Distribution, Estimators, Bias, and Variance	L+D+PC	BB/Lab	2	31	19 & 20/8/2024	23/8/24
MODULE 5							
28	Introduction to Virtual Reality and Virtual Environment:	L+D+PC	BB/Lab	1	32	21/8/2024	24/8/24
29	Computer and Real time computer graphics,	L+D+PC	BB/Lab	1	33	23/8/2024	26/8/24
30	Flight Simulation, Virtual environment requirement, benefits of virtual reality	L+D+PC	BB/Lab	1	34	24/8/2024	28/8/24
31	Augmented Reality: Taxonomy, technology and features of augmented reality,	L+D+PC	BB/Lab	1	35	26/8/2024	30/8/24
32	difference between AR and VR, Challenges with AR, AR systems and functionality,	L+D+PC	BB/Lab	1	36	27/8/2024	31/8/24
33	Augmented reality methods, visualization techniques for augmented reality,	L+D+PC	BB/Lab	1	37	28/8/2024	2/9/24
34	enhancing interactivity in AR environments, evaluating AR systems.	L+D+PC	BB/Lab	1	38	30/8/2024	2/9/24
MODULE 6							
35	Introduction to MB : Creativity and motivation,	L+D+PC	BB/Lab	1	39	2/9/2024	3/9/24
36	Computer hardware architecture,	L+D+PC	BB/Lab	1	40	3/9/2024	4/9/24
37	understanding programming,	L+D+PC	BB/Lab	1	41	4/9/2024	4/9/24
38	word and sentence	L+D+PC	BB/Lab	1	42	6/9/2024	6/9/24
39	Conversing with Python,	L+D+PC	BB/Lab	1	43	9/9/2024	6/9/24
40	Terminology, Debugging, The learning journey	L+D+PC	BB/Lab	1	44	10/9/2024	10/9/24
41	Revision	L+D+PC	BB/Lab	1	45	11/9/2024	10/9/24
42	Revision	L+D+PC	BB/Lab	1	46	13/9/2024	13/9/24
43	Model Paper discussion if available	L+D+PC	BB/Lab	1	47	14/9/2024	


Total No. of Lecture Hours = 30

Total No. of Practical Hours = 10

Total No. of Revision Hours = 03

	Mode of Assignment and instructions	Date
Assignment 1	Practice on visualisation of data tools and understand the machine interaction. Certificate should be done in Machine learning and hardcopy has to be submitted. https://onlinecourses.nptel.ac.in/noc24_cs81/preview	04/07/2024
Assignment 2	Analyse the Google map for traffic congestion in a big city if IOT is implemented	01/08/2024
Assignment 3	Learn simple algorithms and solve business problems using decision tree and simulations	04/09/2024


Course In charge


04/7/24.
HOD - MBA


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