

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

LESSON PLAN

Faculty Name: Sk .Khadar Zelani

Academic Year: 2023-24

Semester: I

Class: IVB.Tech ECE

Course: Radar Engineering

Lecture	TOPIC TO BE COVERED	Teaching aid	Text Book	Page No.
Unit -I : Introduction				
L1	Introduction: Nature of Radar.	GGB	T1	1
L2	Maximum Unambiguous Range	GGB	T1	2
L3	Radar Waveforms, Simple form of Radar Equation,	GGB	R1	3
L4	Radar Block Diagram and Operation	GGB	T1	5
L5	Radar Frequencies ,Applications and related problems	GGB	T1	7
L6	Radar Equation: Prediction of Range Performance	GGB	T1	15
L7	Minimum Detectable Signal	GGB	T1	16
L8	Receiver Noise and SNR, Integration of Radar Pulses	GGB	T1	18
L9	Radar Cross Section of Targets (sphere, cone-sphere).	GGB	T1	33
L10	Transmitter power.	GGB	T1	52
Radar Equation				
L11	PRF and Range Ambiguities	GGB	T1	53
L12	System Losses (Qualitative treatment)	GGB	T1	56
Unit-II CW and FM,FM-CW Radar				
L14	CW and Frequency Modulated Radar, Doppler effect	GGB	T1	68
L15	CW Radar – Block Diagram	PPT	W3	70
L16	Isolation between Transmitter and Receiver	GGB	T1	71
L17	Non-zero IF Receiver, Receiver Bandwidth Requirement	GGB	T1	74
L18	Applications of CW radar	PPT	W1	80
L19	FMCW Radar, Range and Doppler Measurement	PPT	W1	81
L20	Block Diagram and Characteristics	GGB	T1	83
L21	FM-CW altimeter, Measurement Errors	GGB	T1	84
L22	Multiple Frequency CW Radar.	GGB	T1	95
Unit -III : MTI and Pulse Doppler Radar				
L23	Introduction, Principle	GGB	T1	101
L24	MTIR Radar with Power Amplifier Transmitter & power oscillator.	GGB	T1	105
L25	Delay Line Cancellers, Filter Characteristics	PPT	W2	107
L26	Blind Speeds, Double Cancellation ,staggered PRFs,	PPT	W2	109
L27	Range Gated Doppler Filters. MTI Radar Parameters	GGB	T1	114
L28	Limitations to MTI Performance	GGB	T1	129
L29	Non-coherent MTI, MTI versus Pulse Doppler Radar	GGB	T1	138
L30	Tracking with Radar	PPT	W1	152
L31	Sequential Lobing	GGB	T1	153
L32	Conical Scan	GGB	T1	155
L33	Mono-pulse Tracking.	GGB	T1	160

Unit- IV :Rader Amplitude Comparison Mono-pulse				
L34	Rader Amplitude Comparison Mono-pulse (one – coord)	GGB	T1	160
L35	Rader Amplitude Comparison Mono-pulse (two – coord)	GGB	T1	165
L36	Phase Comparison Mono-pulse.	GGB	T1	165
L37	Target Reflection Characteristics and Angular Accuracy	GGB	T1	167
L38	Tracking in Range Acquisition, Scanning Patterns	GGB	T1	177
L39	Comparison of Trackers	GGB	T1	182
L40	Radar Antennas – Antenna Parameters	PPT	R1,W1	540
L41	Reflector Antennas	PPT	R1,W1	553
L42	Lens Antennas	PPT	T1	248
L43	Cosecant- Squared Antenna Pattern, Radomes	GGB	W1	258
Unit- V: Radar Receivers				
L44	Electronically Steered Phased Array Antennas	GGB	T1	278
L45	Phase Shifters	GGB	T1	286
L46	Frequency – scan Arrays	GGB	R1	581
L47	Radiation for Phased Array	GGB	R1	589
L48	Architecture for Phased Arrays	PPT	W1	369
L49	Detection of Radar Signals in Noise: Introduction	GGB	T1	369
L50	Matched Filter Receiver – Response Characteristics	GGB	T1	371
L51	Matched Filter Receiver – Response Derivation	GGB	T1	375
L52	Correlation detection, Detection criteria	GGB	T1	376
L53	Detector Characteristics, Automatic Detection	GGB	T1	382
L54	Constant False Alarm Rate Receiver	PPT	W2	392
L55	Noise Figure and Noise Temperature.	GGB	T1	343
L56	Displays – types	PPT	W2	353
L57	Duplexer – Branch type	GGB	T1	359
L58	Duplexer – Balanced type	GGB	T1	360
L59	Circulators as Duplexers	GGB	T1	365
L60	Introduction to Phased Array Antennas	GGB	T1	278
L61	Basic Concepts Radiation Pattern	PPT	W1	279
L62	Beam Steering, Beam Width changes	GGB	T1	282
L63	Series versus Parallel Feeds	GGB	T1	285
L64	Applications, Advantages, Limitations	GGB	T1	334
GRAND TOTAL OF CLASSES			64	

TEXT BOOKS:

T1. Introduction to Radar Systems – Merrill I. Skolnik, SECOND EDITION, McGraw – Hill, 1981.

T2. Radar Engineering and fundamentals of Navigational Aids-G.S.N.Raju, I.K International, 2008.

REFERENCES:

R1. Introduction to Radar Systems – Merrill I. Skolnik, THIRD EDITION, Tata McGraw – Hill, 2001

R2. Radar: Principles, Technologies, Applications- Byron Edde, Pearson Education.

* GGB: Green Glass Board

* PPT: Power Point Presentation

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PULLADIGUNTA, GUNTUR-522017.

SIGNATURE OF FACULTY



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Pulladigunta (V) Vatticherukuru (M), Guntur (Dist.)



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

LESSON PLAN

Faculty Name : K.Rajitha
Course Name : Network Analysis
Academic Year : 2023-24 II.Semester
Degree & Branch : I B.Tech ECE

S.No	Topic	Teaching Aid	Books
UNIT-I			
1	Types of circuit components	Chalk & Talk	T1
2	Types of Sources and Source Transformations	Chalk & Talk, PPT	T1, W1
3	Mesh analysis	Chalk & Talk, PPT	T1
4	Nodal analysis	Chalk & Talk	T1
5	problem solving with resistances only including dependent sources also	Chalk & Talk	T1
6	Principal of Duality with examples	Chalk & Talk	T1, W1
7	Network theorems	Chalk & Talk	T1, W4
8	Thevinin's theorem - Problems	Chalk & Talk	T1, R1
9	Norton's theorem - Problems	Chalk & Talk	R1, T1
10	Milliman's theorem - Problems	Chalk & Talk	R1, T2
11	Reciprocity theorem - Problems	Chalk & Talk	T1
12	Compensation theorem - Problems	Chalk & Talk PPT	T1, R3
13	Substitution theorem - Problems	Chalk & Talk	T1, T2
14	Superposition theorem - Problems	Chalk & Talk	T1
15	Max Power Transfer theorem - Problems	Chalk & Talk PPT	T1, R2
16	Tellegens theorem - Problems	Chalk & Talk	T1, T2
17	problem solving using dependentsources also	Chalk & Talk	T1
UNIT-II : TRANSIENTS			
18	Transients: First order differential equations, Definition of time constants	Chalk & Talk	T1, R1
19	R-L circuit, R-C circuit with DC excitation	Chalk & Talk	T1, R1
20	evaluating initial conditions procedure, second order differential equations		T1, R1
21	homogeneous, non-homogenous	Chalk & Talk	T1, R1
22	problem-solving using R-L-C elements with DC excitation and AC excitation	Chalk & Talk	T1, R1

23	Response as related to s-plane rotation of roots	Guest Lecture	T1,R1
24	Laplace transform: introduction	Chalk & Talk	T1,R1
25	Laplace transformation, basic theorems	Chalk & Talk	T1,R1
26	problem solving using Laplace transform	Chalk & Talk	T1,R1
27	partial fraction expansion	Chalk & Talk	T1,R1
28	Heaviside's expansions	Chalk & Talk	T1,R1
UNIT III STEADY STATE ANALYSIS OF A.C CIRCUITS			
29	Impedance concept, phase angle	Chalk & Talk	T1
30	series R-L, R-C, R-L-C circuits	Chalk & Talk	T1
31	problem solving	Chalk & Talk	R1, T1
32	Complex impedance and phasor notation for R-L, R-C, R-L-C	Chalk & Talk	T1,R1
33	problem solving using mesh analysis	Chalk & Talk	T1,R1
34	problem solving using nodal analysis	Chalk & Talk	T1,R1
35	Star-Delta conversion	Chalk & Talk	T1
36	Problem solving using Laplace transforms also.	Chalk & Talk	R2, T1
UNIT-IV COUPLED CIRCUITS			
37	Introduction to resonance, Definition of Q, Series resonance, Bandwidth of series resonance, Parallel resonance	Chalk & Talk	W6, T2
38	Parallel resonance- resistance present in both branches, anti resonance at all frequencies	Chalk & Talk	T2,W6
39	Introduction to Coupled Circuits, Self inductance, Mutual inductance	Chalk & Talk	T2,W4
40	Coefficient of coupling, analysis of coupled circuits	Chalk & Talk	T1
41	Natural current, Dot rule of coupled circuits; Conductively coupled equivalent circuits	Chalk & Talk	R2, T2
42	problem solving	Chalk & Talk	T2
UNIT -V: TWO-PORT NETWORKS			
43	Introduction to two-port networks	Chalk & Talk	T2,W3
44	Z-parameters, Y-parameters	Chalk & Talk	T2
45	Transmission line parameters, Inverse Transmission line parameters	Chalk & Talk	T2,W3
46	h-parameters, Inverse h-parameters	Chalk & Talk	T2
47	Relationship of two port networks	Chalk & Talk	T1, T2
48	Relationship between parameter sets	Chalk & Talk	T1
49	Cascading of two port networks, series & parallel connection of two port networks	Chalk & Talk	T2
50	problem solving including dependent sources	Chalk & Talk	R2, T2

51	Image and iterative impedances	Chalk & Talk	T2,R2
52	Image and iterative transfer constants	Chalk & Talk	T2,R3
53	Insertion loss. Attenuators and pads	Chalk & Talk	T2,R2
54	Lattice network and its parameters	Chalk & Talk	T2,R3
55	Impedance matching networks	Chalk & Talk	T2,R3

Textbooks:

1. Network Analysis – ME Van Valkenburg, Prentice Hall of India, revised 3rd Edition, 2019.
2. Engineering Circuit Analysis by William H. Hayt, Jack Kemmerly, Jamie Phillips, Steven M. Durbin, 9th Edition 2020.
3. Network lines and Fields by John. D. Ryder 2nd Edition, PHI

Reference Books:

1. D. Roy Choudhury, Networks and Systems, New Age International Publications, 2013.
2. Joseph Edminister and Mahmood Nahvi, Electric Circuits, Schaum's Outline Series, 7th Edition, Tata McGraw Hill Publishing Company, New Delhi, 2017
3. Fundamentals of Electric Circuits by Charles K. Alexander and Matthew N. O. Sadiku, McGraw-Hill Education.

WEB REFERENCES:

1. https://www.tutorialspoint.com/network_theory/index.htm
2. [https://en.wikipedia.org/wiki/Network_analysis_\(electrical_circuits\)](https://en.wikipedia.org/wiki/Network_analysis_(electrical_circuits))
3. <https://www.electrical4u.com/two-port-network/>
4. <https://electrical-engineering-portal.com/download-center/books-and-guides/electrical-engineering/network-theorems>
5. <https://www.allaboutcircuits.com/textbook/direct-current/chpt-10/mesh-current-method/>
6. [www.youtube.com/Neso_Academy/ Network analysis](http://www.youtube.com/Neso_Academy/Network_analysis)
7. [www.youtube.com/Dr.Nagaraja_Kumari /Network Theorems videos](http://www.youtube.com/Dr.Nagaraja_Kumari/Network_Theorems_videos)



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING LESSON PLAN

Faculty Name : K.Rajitha
Course Name : ELECTRONIC MEASUREMENTS & INSTRUMENTATION
Academic Year : 2023-24 I Semester
Degree & Branch : III B.Tech ECE

S.No	Topic	Teaching Aid	Books
	UNIT -I	Chalk & Talk	T1
1	Performance characteristics of instruments	Chalk & Talk	T1
2	Static characteristics, Accuracy, Resolution, Precision, Expected value, Error, Sensitivity	Chalk & Talk	T1
3	Errors in Measurement	Chalk & Talk	T1
4	Dynamic Characteristics-speed of response, Fidelity, Lag and Dynamic error	Chalk & Talk	T1
5	Types of Errors in Measurement and their Analysis	Chalk & Talk	T1
6	Design of Multi-range DC Voltmeter	Chalk & Talk	T1
7	Design of Multi-range AC Voltmeter	Chalk & Talk, PPT	T1,R3
8	Design of Multi-range DC Ammeter	Chalk & Talk	T1
9	Design of Multi-range AC Ammeter	Chalk & Talk, PPT	T1
10	Ohmmeters series type, shunt type Using D' Arsonval Movement	Chalk & Talk	T1,R1
11	True RMS Meter	Chalk & Talk	T1
	UNIT -II		
12	Specifications and Design Aspects of Signal Generator	Chalk & Talk	T1
13	AF sine and square wave signal generators	Chalk & Talk	T1
14	Function Generators	Chalk & Talk	T1
15	Random noise Generators	Chalk & Talk	T1
16	Arbitrary waveform Generators	Chalk & Talk	T1
17	Introduction to Wave Analyzers	Chalk & Talk	T1,R2
18	Harmonic Distortion Analyzers	Chalk & Talk	T1,R1
19	Spectrum Analyzers	Chalk & Talk	T1,R3



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20	Digital Fourier Analyzers	Chalk & Talk	T1
	UNIT -III		
21	Oscilloscopes-General Purpose CRO's ,Block Diagram	Chalk & Talk	T1,R1
22	Function and Implementation of Various blocks-CRT features	Chalk & Talk	T1
23	vertical amplifiers, horizontal deflection system	Chalk & Talk	T1
24	sweep, trigger pulse Circuit	Chalk & Talk	T1
25	Delay line, sync selector circuits	Chalk & Talk	T1
26	Various Controls and their Functions	Chalk & Talk	T1
27	Types of probes for CRO	Chalk & Talk	T1,R3
28	Measurement of frequency and phase difference using Lissajous Pattern	Chalk & Talk	T1
29	Dual beam CRO, Dual trace oscilloscope	Chalk & Talk	T1
30	Delay Line Oscilloscope, sampling oscilloscope	Chalk & Talk	T1,R3
31	Analog storage oscilloscope, digital storage oscilloscope	Chalk & Talk	T1
	UNIT -IV		
32	DC Bridges – Wheatstone bridge	Chalk & Talk	T1
33	Measurement of Very Low Resistance	Chalk & Talk	T1,R1
34	Measurement of inductance- Maxwell's bridge	Chalk & Talk	T1
35	Anderson bridge.	Chalk & Talk	T1
36	Measurement of capacitance - Schearing Bridge	Chalk & Talk	T1,R1
37	Wien Bridge	Chalk & Talk	T1
38	Errors and precautions in using bridges	Chalk & Talk	T1
39	Q-meter :Principle of Operation	Chalk & Talk	T1,R3
40	Measurement Methods and Sources of errors	Chalk & Talk	T1
41	Counters : principle of operation, modes of operation-	Chalk & Talk	T1
42	Sources of errors	Chalk & Talk	T1
	UNIT -V		
43	Transducers- active & passive transducers	Chalk & Talk	T1
44	Resistance transducers,	Chalk & Talk	T1,R1



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44	Inductance transducers,	Chalk & Talk	T1
45	Capacitance transducers	Chalk & Talk	T1
46	Strain Gauges	Chalk & Talk	T1,R1
47	LVDT ,Piezo Electric transducers	Chalk & Talk	T1
48	physical parameters Temperature	Chalk & Talk	T1
49	Measurement of Force	Chalk & Talk	T1,R1
50	Measurement of Pressure	Chalk & Talk	T1,R1
51	Measurement of Velocity	Chalk & Talk	T1,R1
52	Measurement of Acceleration	Chalk & Talk	R1
53	Measurement of displacement	Chalk & Talk	R1

TEXTBOOKS:

1. Electronic instrumentation, second edition - H.S.Kalsi, Tata McGraw Hill, 2004.
2. Modern Electronic Instrumentation and Measurement Techniques – A.D. Helfrick and W.D. Cooper, PHI, 5th Edition, 2002.

REFERENCES:

1. Electronic Instrumentation & Measurements - David A. Bell, PHI, 2nd Edition, 2003.
2. Electronic Test Instruments, Analog and Digital Measurements - Robert A. Witte, Pearson Education, 2nd Ed., 2004.
3. Electronic Measurements & Instrumentations by K. Lal Kishore, Pearson Education - 2005.

WEB REFERENCES:

1. https://www.tutorialspoint.com/electronic_measuring_instruments/index.htm
2. <https://nptel.ac.in/courses/108/105/108105153/#>
3. <https://freevidelectures.com/course/4111/nptel-electrical-measurement-electronic-instruments/19>
4. [www.youtube.com/Ekeeda/Electronic Instrumentation and measurements](http://www.youtube.com/Ekeeda/Electronic_Instrumentation_and_measurements)

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Faculty In-Charge



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Guntur-522017, Andhra Pradesh, India



Department of Computer Science and Engineering

Faculty Name

;Ms.D,VIJAYALAKSHMI

Course Name :operating system

Academic year :2023-24

Degree&Branch:IIInd year-Isem

Teaching/Instructional Plan

S.No	Name of the Topic	No. of hours	Delivery Method
(Unit-1) OPERATING SYSTEMS OVERVIEW			
1	Operating system functions	1	Chalk & Talk
2	Operating system structure	1	Chalk & Talk
3	Operating system operations	1	Chalk & Talk
4	Computing environments	1	Chalk & Talk
5	Open-Source Operating Systems	1	Chalk & Talk
SYSTEM STRUCTURES			
6	Operating System Services	1	Chalk & Talk
7	User and Operating-System Interface	1	Chalk & Talk
8	Giving Multiple Commands	1	Chalk & Talk
9	System calls	1	Chalk & Talk
10	Types of System Calls	1	Chalk & Talk
11	System programs	1	Chalk & Talk
12	operating system structure	2	Chalk & Talk
13	operating system debugging, System Boot.	1	Chalk & Talk
(Unit-II) PROCESS CONCEPT			
14	Process scheduling	1	Chalk & Talk
15	Operations on processes	1	Chalk & Talk
16	Inter-process communication	1	Chalk & Talk
17	Communication in client server systems	1	Chalk & Talk
18	MULTITHREADED MODELS: Multithreading models	1	Chalk & Talk
19	Thread libraries, threading issues	1	Chalk & Talk
20	PROCESS SCHEDULING: Scheduling Criteria	1	Chalk & Talk
21	Scheduling algorithms	2	Chalk & Talk
22	Scheduling algorithms	2	Chalk & Talk
23	Multiprocessor scheduling	1	Chalk & Talk
24	Thread scheduling	1	Chalk & Talk
25	INTERPROCESS COMMUNICATION: Race conditions,	1	Chalk & Talk

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**Department of Computer Science and Engineering**

	Critical Regions		
26	Command Line Structure	1	Chalk & Talk
27	Mutual exclusion with busy waiting,	1	Chalk & Talk
28	Sleep and wakeup, Semaphores, Mutexes	2	Chalk & Talk
29	Monitors, Message passing, Barriers	1	Chalk & Talk
30	Classical IPC Problems - Dining philosophers problem, Readers and writers problem.	2	Chalk & Talk
	UNIT-III (MEMORY MANAGEMENT STRATEGIES)		
31	Memory-Management Strategies: Introduction	2	Chalk & Talk
32	Swapping, Contiguous memory allocation	1	Chalk & Talk
33	Paging	1	
34	Segmentation.	1	Chalk & Talk
35	VIRTUAL MEMORY MANAGEMENT: Introduction,	1	Chalk & Talk
36	Demand paging, Copy on-write	1	Chalk & Talk
37	Page replacement, Frame allocation,	1	Chalk & Talk
38	Thrashing, Memory-mapped files	1	Chalk & Talk
39	Kernel memory allocation.	1	
	UNIT-IV (DEADLOCKS)		
40	Resources, Conditions for resource deadlocks	1	Chalk & Talk
41	Ostrich algorithm,	1	Chalk & Talk
42	Deadlock detection and recovery,	1	Chalk & Talk
43	Deadlock avoidance	1	Chalk & Talk
44	Deadlock prevention	1	Chalk & Talk
45	FILE SYSTEMS: Files, Directories, Filesystem implementation,	1	Chalk & Talk
46	management and optimization.	1	Chalk & Talk
47	Overview of disk structure, and attachment,	1	Chalk & Talk
48	Disk scheduling	1	Chalk & Talk
49	RAID structure, Stable storage implementation.	1	Chalk & Talk
	UNIT-V (SYSTEM PROTECTION)		
50	Goals of protection, Principles and domain of protection,	1	Chalk & Talk
50	Access matrix, Access control	1	Chalk & Talk
52	Revocation of access rights	1	Chalk & Talk
53	SYSTEM SECURITY: Introduction, Program threats, System and network threats,	1	Chalk & Talk
54	Cryptography for security, User authentication	1	Chalk & Talk
55	Implementing security defenses,	1	Chalk & Talk
56	Firewalling to protect systems and networks	1	Chalk & Talk

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57	Computer security classification.	1	Chalk & Talk
58	Case Studies: Linux	1	Chalk & Talk
59	Microsoft Windows	1	Chalk & Talk

Total no of classes: 65 TEXT

BOOKS:

T1	Silberschatz A, Galvin P B, and Gagne G, Operating System Concepts, 9th edition, Wiley, 2013. 2) Tanenbaum A S, Modern Operating Systems, 3rd edition, Pearson Education, 2008. (for Interprocess Communication and File systems.)
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REFERENCE BOOKS:

R1	Dhamdhere DM, Operating Systems A Concept Based Approach, 3rd edition, Tata McGraw-Hill, 2012. 2) Stallings W, Operating Systems - Internals and Design Principles, 6th edition, Pearson Education, 2009. 3) Nutt G, Operating Systems, 3rd edition, Pearson Education, 2004
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WEB REFERENCE:

W1	https://nptel.ac.in/courses/106/105/106105214
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Instructional Methods and Pedagogies

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[Signature]



Department of Computer Science and Engineering

The following methods are some of the appropriate and efficient methodologies according to the characteristic of the learner.

	INSTRUCTIONAL METHODOLOGY	YES/NO
1.	Chalk & Talk	YES
2	PPT	NO
3	NPTEL Videos	
4	Guest Lectures & Workshops	NO
5	Student centric Learning:	
	i. Seminar Method	YES
	ii. Group discussions	YES
	iii. Assignment	YES
	iv. Quiz	YES
	v. Learning from Industrial visits	NO
	vi. Brain Storming	YES
	vii. Minutes of paper	YES
	viii. Puzzles	YES
	ix. TPS (Think Pair Share)	YES

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DEPARTMENT OF INFORMATION TECHNOLOGY

Faculty Name : Mrs.D.UDAYADURGARANI

Course Name : C++

Academic year : 2023-24

Degree & Branch: IInd year-Isem

Teaching/Instructional Plan

Lecture / Tutorial No	Unit-No	TOPIC COVERED	Teaching Aid	Reference text Book	No. of Hours Required
UNIT-I					
L.1	1	Introduction to C++	GB & PC	T1	1
L.2	1	Difference between C and C++	GB & PC	T1	1
L.3	1	Evolution of C++	GB & PC	T1	1
L.4	1	The Object Oriented Technology	GB & PC	T1	1
L.5	1	Disadvantages of Conventional Programming	GB & PC	T1	1
L.6	1	Key Concepts of Object Oriented Programming	GB & PC	T1	1
L.7	1	Advantages of OOP	GB & PC	T1	1
L.8	1	Object Oriented Language	GB & PC	T1	1
UNIT-II					
L.9	2	Classes and Objects & Constructors and Destructor	GB & PC	T1	1
L.10	2	Classes in C++	GB & PC	T1	1
L.11	2	Declaring Objects	GB & PC	T1	1
L.12	2	Access Specifiers and their Scope	GB & PC	T1	1
L.13	2	Defining Member Function	GB & PC	T1	1
L.14	2	Overloading Member Function	GB & PC	T1	1
L.15	2	Nested class	GB & PC	T1	1
L.16	2	Constructors and Destructors	GB & PC	T1	1

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DEPARTMENT OF INFORMATION TECHNOLOGY

L.17	2	Introduction	GB & PC	T1	1
L.18	2	Constructors and Destructor	GB & PC	T1	1
L.19	2	Characteristics of Constructor and Destructor	GB & PC	T1	1
L.20	2	Application with Constructor	GB & PC	T1	1
L.21	2	Constructor with Arguments parameterized Constructor	GB & PC	T1	1
L.22	2	Destructors	GB & PC	T1	1
L.23	2	Anonymous Objects	GB & PC	T1	1
UNIT-III					
L.24	3	Operator Overloading and Type Conversion & Inheritance	GB & PC	T1	1
L.25	3	The Keyword Operator	GB & PC	T1	1
L.26	3	Overloading Unary Operator	GB & PC	T1	1
L.27	3	Operator Return Type	GB & PC	T1	1
L.28	3	Overloading Assignment Operator(=)	GB & PC	T1	1
L.29	3	Rules for Overloading Operators	GB & PC	T1	1
L.30	3	Inheritance	GB & PC	T1	1
L.31	3	Reusability	GB & PC	T1	1
L.32	3	Types of Inheritance	GB & PC	T1	1
L.33	3	Virtual Base Classes-Object as a Class Member	GB & PC	T1	1
L.34	3	Abstract Classes	GB & PC	T1	1
L.35	3	Advantages of Inheritance	GB & PC	T1	1
L.36	3	Disadvantages of Inheritance	GB & PC	T1	1
UNIT-IV					
L.37	4	Pointers & Binding Polymorphisms and Virtual Functions	GB & PC	T1	1
L.38	4	Pointer	GB & PC	T1	1
L.39	4	Features of Pointers	GB & PC	T1	1
L.40	4	Pointer Declaration	GB & PC	T1	1
L.41	4	Pointer to Class	GB & PC	T1	1
L.42	4	Pointer Object	GB & PC	T1	1
L.43	4	The this Pointer	GB & PC	T1	1
L.44	4	Pointer to Derived Classes and Base	GB & PC	T1	1

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DEPARTMENT OF INFORMATION TECHNOLOGY

		Class			
L.45	4	Binding Polymorphisms and Virtual Functions	GB & PC	T1	1
L.46	4	Introduction	GB & PC	T1	1
L.47	4	Binding in C++	GB & PC	T1	1
L.48	4	Virtual Functions	GB & PC	T1	1
L.49	4	Rules for Virtual Function	GB & PC	T1	1
L.50	4	Virtual Destructor	GB & PC	T1	1
UNIT-V					
L.51	5	Generic Programming with Templates & Exception Handling	PPT	T1	1
L.52	5	Generic Programming with Templates & Exception Handling	GB & PC	T1	1
L.53	5	Normal Function Templates	GB & PC	T1	1
L.54	5	Overloading of Template Function	GB & PC	T1	1
L.55	5	Bubble Sort Using Function Templates	GB & PC	T1	1
L.56	5	Difference between Templates and Macros	GB & PC	T1	1
L.57	5	Linked Lists with Templates	PPT	T1	1
L.58	5	Exception Handling	GB & PC	T1	1
L.59	5	Principles of Exception Handling	GB & PC	T1	1
L.60	5	The Keyword <code>throw</code> and <code>catch</code>	GB & PC	T1	1
L.61	5	Multiple Catch Statements	GB & PC	T1	1
L.62	5	Specifying Exceptions	GB & PC	T1	1
L.63	5	Overview of Standard Template Library	GB & PC	T1	1
L.64	5	STL Programming Model	GB & PC	T1	1
L.65	5	Containers	GB & PC	T1	1
L.66	5	Sequence Containers	GB & PC	T1	1
L.67	5	Associative Containers	GB & PC	T1	1
L.68	5	Algorithms	GB & PC	T1	1
L.69	5	Iterators	GB & PC	T1	1
L.70	5	Vectors	GB & PC	T1	1
L.71	5	Lists	GB & PC	T1	1



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DEPARTMENT OF INFORMATION TECHNOLOGY

L.72	5	Lists	GB & PC	T1	1
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TEACHING METHODOLOGIES:

GB-GLASSBOARD

PC: PERSONAL COMPUTER

PPT- POWERPOINT PRESENTATION

Course Educational Outcomes (CEO):

At the end of this course, students will be able to:

- Classify object-oriented programming and procedural programming
- Apply C++ features such as composition of objects, operator overloads, dynamic memory allocation, inheritance and polymorphism, file I/O, exception handling
- Build C++ classes using appropriate encapsulation and design principles
- Apply object-oriented or non-object oriented techniques to solve bigger computing problems

TEXTBOOKS:

- 1) A First Book of C++, Gary Bronson, Cengage Learning.
- The Complete Reference C++, Herbert Schildt, TMH

REFERENCE BOOKS:

- 1) Object Oriented Programming C++, Joyce Farrell, Cengage.
- 2) C++ Programming: from problem analysis to program design, DS Malik, Cengage Learning
- 3) Programming in C++, Ashok N Kamthane, Pearson 2nd Edition

WEBSITE REFERENCES

1. Geeksforgeeks.org.
2. Tutorialspoint.com
3. JavaTpoint.c

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Guntur-522017, Andhra Pradesh, India



DEPARTMENT OF INFORMATION TECHNOLOGY

Instructional Methods and Pedagogicals:

The following methods are some of the appropriate and efficient methodologies according to the characteristic of the learner.

S.No.	INSTRUCTIONAL METHODOLOGY	YES/NO
1.	Chalk & Talk	YES
2	PPT	YES
3	NPTEL Videos	YES
4	Guest Lectures & Workshops	YES
5	Student centric Learning:	
	i. Seminar Method	YES
	ii. Group discussions	YES
	iii. Assignment	YES
	iv. Quiz	YES
	v. Learning from Industrial visits	
	vi. Brain Storming	YES
	vii. Minutes of paper	
	viii. Puzzles	YES
	ix. TPS (Think Pair Share)	

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J. Anur

DEPARTMENT OF CSE AND DATA SCIENCE

Faculty Name : Mrs. S. Harathi
 Course Name : object oriented programming with java
 Academic year : 2023-24
 Degree & Branch : II year - II sem

Teaching/Instructional Plan

S.NO	Topic Name	No. of hours	Teaching Aid Methodologies	Books
Unit- I: Basic Principles				
1.	Introduction to OOP	1	Chalk & Talk	T1, R1
2.	Procedural programming language and object oriented language	1	Chalk & Talk	T1, T2, R2
3.	Principles of OOP, applications of OOP	1	ONLINE	W1
4.	History of java, java features, JVM, program structure	1	ONLINE	W1
5.	Variables, primitive data types, identifiers, literals, operators	1	ONLINE	W1
6.	Expressions, precedence rules And associativity, primitive type conversion and casting, flow of control.	1	PPT	W2
Unit 2				
7.	Classes and objects	1	Chalk & Talk	T2, R1
8.	Class declaration, creating objects, methods	1	Chalk & Talk	T1, A1
9.	constructors and constructor overloading	1	Chalk & Talk	T2, R2
10.	garbage collector	1	Chalk & Talk	T2, R1
11.	Importance of static keyword and examples	1	Chalk & Talk	T3, R1
12.	this keyword, arrays	1	PPT	W3, W4
13.	command line arguments,	1	PPT	W5



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	nested classes.			
Unit-III				
14.	Inheritance, types of inheritance	1	PPT	W6
15.	super keyword, final keyword,		Chalk & Talk	T2, A1
16.	overriding and abstract class		PPT	W7
17.	Interfaces, creating the packages,	1	Chalk & Talk	T2, A1
18.	Using packages, importance of CLASSPATH and java.lang package	1	Chalk & Talk	T1, T2, R2
19.	Exception handling, importance of try, catch, throw, throws and finally block	1	PPT	W8
20.	user-defined exceptions, Assertions.	1	Chalk & Talk	T1, T2, R1
Unit-IV				
21.	Multithreading: introduction, thread life cycle	1	PPT	W9
22.	creation of threads, thread priorities	1	PPT	W9
23.	thread synchronization, communication between threads	1	Chalk & Talk	T1, R2, T2
24.	Reading data from files and writing data to files, random access file,	1	Chalk & Talk	T1, R2, T2
Unit-v				
25.	Applet class, Applet structure,	1	PPT	W10
26.	Applet lifecycle, sample Applet programs	1	PPT	W10
27.	Event handling: event delegation model	1	Chalk & Talk	T2, R1
28.	sources of event, EventListeners	1	Chalk & Talk	T2, R1, W1
29.	adapter classes, inner classes	1	PPT	W11
Unit VI				
30.	AWT: introduction, components and containers	1	PPT	W12
31.	Button, Label, Checkbox, Radio Buttons	1	PPT	W12

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32.	List Boxes, ChoiceBoxes	1	Chalk&Talk	T1,R1,T2,
33.	Containerclass, Layouts, Menu and Scrollbar	1	Chalk&Talk	T1,R1,T2,

TEXTBOOKS:

T1	The complete Reference Java, 8 th edition, Herbert Schildt, TMH.
T2	Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford.
T3	Introduction to java programming, 7 th edition by Y Daniel Liang, Pearson

REFERENCE BOOKS:

R1	Swing: Introduction, JFrame, JApplet, JPanel, Components in Swings, Layout Managers in
R2	Swings, JList and JScrollPane, SplitPane, JTabbedPane, JTree, JTable, Dialog Box.

WEBREFERENCE:

W1	https://www.javatpoint.com/java-tutorial
W2	https://slideplayer.com/slide/6809166/
W3	https://www.javatpoint.com/this-keyword
W4	https://www.javatpoint.com/array-in-java
W5	https://www.javatpoint.com/command-line-argument
W6	https://www.slideshare.net/AdilAslam4/inheritance-and-its-type-in-java
W7	https://techvidvan.com/tutorials/abstract-class-vs-interface/
W8	https://slideplayer.com/slide/6812441/
W9	https://techvidvan.com/tutorials/java-multithreading/
W10	https://www.slideshare.net/wanizahoor/applets-in-java

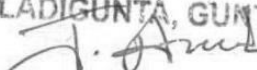
DEPARTMENT OF CSE AND DATA SCIENCE

W11	https://www.javatpoint.com/java-adapter-classes
W12	https://www.javatpoint.com/java-adapter-classes

Instructional Methods and Pedagogies

The following methods are some of the appropriate and efficient methodologies according to the characteristic of the learner.

S.No.	INSTRUCTIONAL METHODOLOGY	YES/NO
1.	Chalk & Talk	YES
2	PPT	YES
3	NPTEL Videos	
4	Guest Lectures & Workshops	YES
5	Learning from Industrial visits	
6	Student centric Learning:	
	i. Seminar Method	YES
	ii. Group discussions	NO
	iii. Assignment	YES
	iv. Quiz	YES
	v. Learning from Industrial visits	YES
	vi. Brain Storming	YES
	vii. Minutes of paper	YES
	viii. Puzzles	YES
	ix. TPS (Think Pair Share)	YES

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 PULLADIGUNTA, GUNTUR-522017.


FacultyName :DR.N.ch.jayarao
 Course Name :objectorientedprogrammingwithjava
 Academic year :2023-24
 Degree&Branch:IIIndyear-IIsem

Teaching/InstructionalPlan

S.NO	TopicName	No.of hours	Teaching Aid Methodologies	Books
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6.	Expressions,precedencerules And associativity, primitive type conversion and casting, flow of control.	1	PPT	W2
Unit2				
7.	Classesand objects	1	Chalk&Talk	T2,R1
8.	Classdeclaration,creatingobjects, methods	1	Chalk&Talk	T1,A1
9.	constructorsandconstructoroverloading	1	Chalk&Talk	T2,R2
10.	garbagecollector	1	Chalk&Talk	T2,R1
11.	Importanceofstatickeyword and examples	1	Chalk&Talk	T3,R1
12.	thiskeyword,arrays	1	PPT	W3,W4
13.	command line arguments, nested classes.	1	PPT	W5
Unit-III				

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Department Artificial Intelligence and Data Science

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16.	overriding and abstract class		PPT	W7
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33.	Container class, Layouts, Menu and Scrollbar	1	Chalk & Talk	T1, R1, T2,

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R2	Swings,JListandJScrollPane,SplitPane,JTabbedPane,JTree,JTable,Dialog Box.

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W2	https://slideplayer.com/slide/6809166/
W3	https://www.javatpoint.com/this-keyword
W4	https://www.javatpoint.com/array-in-java
W5	https://www.javatpoint.com/command-line-argument
W6	https://www.slideshare.net/AdilAslam4/inheritance-and-its-type-in-java
W7	https://techvidvan.com/tutorials/abstract-class-vs-interface/
W8	https://slideplayer.com/slide/6812441/
W9	https://techvidvan.com/tutorials/java-multithreading/
W10	https://www.slideshare.net/wanizahoor/applets-in-java
W11	https://www.javatpoint.com/java-adapter-classes
W12	https://www.javatpoint.com/java-adapter-classes

InstructionalMethodsandPedagogies

The following methodsaresomeoftheappropriateandefficient methodologiesaccordingtothe characteristic of the learner.

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Department Artificial Intelligence and Data Science



S.No.	INSTRUCTIONAL METHODOLOGY	YES/NO
1.	Chalk&Talk	YES
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	iii. Assignment	YES
	iv. Quiz	YES
	v. Learning from Industrial visits	YES
	vi. Brain Storming	YES
	vii. Minutes of paper	YES
	viii. Puzzles	YES
	ix. TPS(Think Pair Share)	YES

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