

TENTATIVE LESSON PLAN: R1921041 ELECTRONIC DEVICES & CIRCUITS

Course Title: ELECTRONIC DEVICES & CIRCUITS			
Section : Sec A & B	Date : 17-08-2020	Page No : 1 of 3	
Revision No : 00	Prepared By :D.RAVI TEJ	Approved By : HOD	
Tools: Black board, ZOOM App			
S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I SEMI CONDUCTOR PHYSICS			
CO1:Identify properties of semiconductor material and Construction and Operaton of Diode			
TB1: Electronic Devices and Circuits-J. Millman, C. Halkias, Tata Mc-Graw Hill, Second Edition.			
TB2: Electronic Devices and Circuits- Salivahanan, Kumar, Vallavaraj, Tata Mc-Graw Hill,			
1	Introduction to Semiconductor Physics	From: 17-08-2020 To: 15-09-2020	Online
2	Insulators, Semi conductors and metals, Mobility and conductivity		
3	Electronics and holes in intrinsic semiconductors		
4	Extrinsic semiconductors, Drift , Diffusion		
5	charge densities in semiconductors, Hall effect, Continuity equation		
6	Fermi level in intrinsic & extrensic semiconductors		
7	Open circuited P-N Junction , Biased P-N Junction, P-N Junction diode		
8	V-I Characteristics, Current components in P-N junction diode		
9	Temperature dependence on V-I Characteristics		
10	Diode resistance, Diode Capacitance		
UNIT-II SPECIAL DIODES & RECTIFIERS AND FILTERS			
CO3: Identify the Applications of Special Diode			
TB1: Electronic Devices and Circuits-J. Millman, C. Halkias, Tata Mc-Graw Hill, Second Edition.			
TB2: Electronic Devices and Circuits- Salivahanan, Kumar, Vallavaraj, Tata Mc-Graw Hill,			
11	Zener diode characteristics, Applications	From: 16-09-2020 To: 01-10-2020	
12	Tunnel Diode		
13	LED, Photo diode		
14	UJT		
15	SCR		
16	Basic Rectifier setup		

17	Half wave Rectifier,		Online
18	Full Wave Rectifier		
19	Bridge Rectifier		
20	Harmonic components		
21	Inductor Filter		
22	Capacitor Filter		
23	L-Section Filter, Multiple L-Section		
24	II-Section Filter, Multiple II Section Filter		
UNIT-III TRANSISTOR CHARACTERISTICS			
CO4: Able to understand the basic principles of electronic device operation with emphasis on bipolar transistors,			
TB1: Electronic Devices and Circuits-J. Millman, C. Halkias, Tata Mc-Graw Hill, Second Edition.			
TB2: Electronic Devices and Circuits- Salivahanan, Kumar, Vallavaraj, Tata Mc-Graw Hill,			
25	Junction Transistor	From: 02-10-2020 To: 12-10-2020	Online
26	Current components		
27	Transistor equation		
28	Transistor act as an Amplifier		
29	Characteristics of Transistor in C.B Configuration		
30	Characteristics of Transistor in C.E Configuration		
31	Characteristics of Transistor in C.C Configuration		
32	Punch through/reach through, Photo Transistor		
33	Transistor as a switch		
34	Typical Transistor junction voltage values		
35	FET Types, Construction, Operation,		
36	FET Characteristics, parameters		
37	MOSFET Types, Construction, Operation		
38	MOSFET Characteristics, Comparison		
39	problems		
UNIT-IV TRANSISTOR BIASING AND THERMAL STABILIZATION			
CO5: Able to understand the basic parameters of electronic devices, their performance, and limiting factors			
TB1: Electronic Devices and Circuits-J. Millman, C. Halkias, Tata Mc-Graw Hill, Second Edition.			
TB2: Electronic Devices and Circuits- Salivahanan, Kumar, Vallavaraj, Tata Mc-Graw Hill,			
40	Need for Biasing,		
41	Operating Point, Load line Analysis		
42	Fixed bias		
43	Collector to base bias		

44	Self bias	From: 13-10-2020 To: 03-11-2020	Online
45	Stabilizations against variations in V_{be} , I_c and Stability factors		
46	Bias compensation,		
47	Thermal Runaway Thermal Stability		
48	FET biasing methods and stabilization		
49	Tutorial		
50	Problems		

UNIT-V SMALL SIGNAL LOW FREQUENCY TRANSISTOR AMPLIFIER

MODEL:BJT

CO6: Analysis and design of Electronic Circuits.

TB1: Electronic Devices and Circuits-J. Millman, C. Halkias, Tata Mc-Graw Hill, Second Edition.

TB2: Electronic Devices and Circuits- Salivahanan, Kumar, Vallavaraj, Tata Mc-Graw Hill

51	Two port network, Hybrid model	From: 04-11-2020 To: 12-11-2020	Online
52	H-Parameters		
53	Analysis of CE Amplifier model using h-parameters		
54	Analysis of CB, CC Amplifier model using h-parameters		
55	Analysis of CE,CB,CC Amplifier using Approximate analysis		
56	Analysis of CS,CG Amplifier		
57	Analysis of CG Amplifier		
58	Conversion of H- parameters		
59	Tutorial		
60	Problems		

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TENTATIVE LESSON PLAN: R1921042
SWITCHING THEORY AND LOGIC DESIGN

Course Title: SWITCHING THEORY AND LOGIC DESIGN		
Section: Sec A & B	Date: 15/09/2020	Page No: 1 to 4
Revision No: 00	Prepared By: Dr. B. Vanajakshi	Approved By: HOD

Tools: Black board, PPTs, and Online

S. No.	Topic	Date	Mode of Delivery
UNIT-I REVIEW OF NUMBER SYSTEMS & CODES AND BOOLEAN THEOREMS AND LOGIC OPERATIONS:			
CO1: An ability to define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation. TB1: Digital Design, 5/e, M. Morris Mano, Michael D Ciletti, PEA.			
1	Representation of Numbers of Different Radix	From: 17-08-2020 To: 15-09-2020	Online Class with ZOOM App
2	Conversation from One Radix to Another Radix		
3	R-1's Compliments and R's Compliments of Signed Numbers		
4	4- Bit Codes: BCD, Excess-3, 2421, 8-4-2-1		
5	9's Compliment Code		
6	Basic Logic Operations -NOT, OR, AND, Universal Building Blocks, EX-OR, EX-NOR - Gates		
7	Standard SOP and POS Forms		
8	Parity Checking, Even Parity, Odd Parity, Hamming Code		
9	NAND-NAND And NOR-NOR Realizations		
10	Representation of Numbers of Different Radix		
11	Conversation from One Radix to Another Radix		
12	R-1's Compliments and R's Compliments of Signed Numbers		
13	4- Bit Codes: BCD, Excess-3, 2421, 8-4-2-1		
14	9's Compliment Code		

15	Basic Logic Operations -NOT, OR, AND, Universal Building Blocks, EX-OR, EX-NOR - Gates		
16	Standard SOP and POS Forms		
17	Parity Checking, Even Parity, Odd Parity, Hamming Code		
18	NAND-NAND And NOR-NOR Realizations		

UNIT-II MINIMIZATION TECHNIQUES AND COMBINATIONAL LOGIC CIRCUITS DESIGN:

CO2: An ability to understand the different switching algebra theorems and apply them for logic functions.

TB1: Digital Design, 5/e, M. Morris Mano, Michael D Ciletti, PEA.

19	Boolean Theorems- De-Morgan Theorems	<p>From: 16-09-2020</p> <p>To: 01-10-2020</p>	<p>Online Class with ZOOM App</p>
20	Principle of Complementation & Duality		
21	Minimization of Logic Functions Using Boolean Theorems		
22	Minimization of Functions Using K-Map Up To 6 Variables		
23	Tabular Minimization		
24	Design of Half Adder, Full Adder		
25	Half Subtractor, Full Subtractor		
26	4-Bit Binary Subtractor		
27	Adder-Subtractor Circuit		
28	BCD Adder Circuit		
29	Excess 3 Adder Circuit		
30	Look-A-Head Adder Circuit		

UNIT-III COMBINATIONAL LOGIC CIRCUITS DESIGN AND INTRODUCTION OF PLD's:

CO3: An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction of logic functions.

TB2: Digital Logic and Computer Design, M. Morris Mano, PEA.

31	Encoder, Multiplexer, Higher Order Multiplexing		
32	Design of Decoder, 7 Segment Decoders		

33	Realization of Boolean Functions Using Decoders and Multiplexers	From: 02-10-2020 To: 12-10-2020	Online Class with ZOOM App
34	Demultiplexer, Higher Order Demultiplexing		
35	4-Bit Digital Comparator and Seven-Segment Decoder		
36	PROM		
37	PAL		
38	PLA-Basics Structures, Realization of Boolean Function		
39	Programming Tables of PLDs		
40	PLD comparison		
41	programming tables of PROM, PAL, PLA		

UNIT-IV SEQUENTIAL CIRCUITS I:

CO4: Able to design various logic gates starting from simple ordinary gates to complex programmable logic devices & arrays.

TB2: Digital Logic and Computer Design, M. Morris Mano, PEA.

42	Classification of Sequential Circuits	From: 13-10-2020 To: 03-11-2020	Online Class with ZOOM App
43	Basic Flip-Flops, Truth Tables and Excitation Tables		
44	Conversion from One Flip-Flop to Flip-Flop		
45	Design of Ripple Counters		
46	Design of Synchronous Counters		
47	Johnson Counter, Ring Counter.		
48	Design of Registers - Buffer Register		
49	Control Buffer Register		
50	Shift Register		
51	Bi-Directional Shift Register		
52	Universal Shift Register.		

UNIT-V SEQUENTIAL CIRCUITS II:

CO5: Able to design various sequential circuits starting from flip-flop to registers and counters.

TB2: Digital Logic and Computer Design, M. Morris Mano, PEA.

53	Finite State Machine	From:	
54	Analysis of Clocked Sequential Circuits		

55	State Diagrams, State Tables	04-11-2020 To: 12-11-2020	Online & Lecture interspersed with discussions
56	Reduction of State Tables and State Assignment		
57	Realization of Circuits Using Various Flip-Flops		
58	Meelay To Moore Conversion and Vice-Versa		
59	Realization of sequence generator,		
60	Design of Clocked Sequential Circuit to detect the given sequence (with overlapping or without overlapping).		

TB1: Digital Design, 5/e, M. Morris Mano, Michael D Ciletti, PEA.

TB2: Digital Logic and Computer Design, M. Morris Mano, PEA.

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TENTATIVE LESSON PLAN: R1941043
SIGNALS AND SYSTEMS

Course Title: SIGNALS AND SYSTEMS		
Section : Sec A & B	Date : 15/09/2020	Page No : 1 of 3
Revision No : 00	Prepared By : V.SEKHARABABU	Approved By : HOD

Tools: ZOOM App, PPTs

S.NO.	TOPIC	Date	Mode of Delivery
UNIT-I INTRODUCTION			
CO1: Able to learn about classifications of signals and systems and how to perform basic operations on signals and systems.			
TB1: Signals and Systems by A.Anand Kumar,PHI			
1	Introduction ,Definition of Signals and Systems	From: 17 /8/20 To: 29/8/20	Lecture interspersed with discussions
2	Classification of Signals		
3	Basic Elementary Signals		
4	Operations on signals: time-shifting, time-scaling, amplitude-shifting, amplitude-scaling		
5	Problems on time scaling, amplitude scaling		
6	Analogy between vectors and signals		
7	Orthogonal signal space ,approximation		
8	MSE ,Complete set of orthogonal functions		
9	Orthogonality in complex functions		
10	Related problems		
UNIT-II FOURIER SERIES AND FOURIER TRANSFORM			
CO2: Able to perform transformations on signals and frequency spectrum analysis.			
TB1: Signals and Systems by A.Anand Kumar,PHI			
11	Fourier series representation	From: 1/9/20 To: 19/9/20	Lecture interspersed with discussions
12	properties of Fourier series		
13	Dirichlet's conditions, problems		
14	Exponential Fourier series		
15	Relation between FFS and EFS		
16	Complex Fourier spectrum		
17	Related problems		
18	Fourier transform from Fourier series		

19	Fourier transform of standard signals		
20	properties of Fourier transforms		
21	Inverse F.T and related problems		
22	F.T for periodic signals		
23	F.T involving impulse and signum function		
24	Introduction to Hilbert transform		

UNIT-III ANALYSIS OF LINEAR SYSTEMS

CO3: Able to analyze the signal transmission through linear systems and how to apply correlation and convolution techniques for different signals.

TB1: Signals and Systems by A.Anand Kumar,PHI

25	Introduction to Linear system	From: 22/9/20 To: 3/10/20	Lecture interspersed with discussions
26	LIT and LTV systems		
27	Concept of conv in time ,frequency domain		
28	Transfer function of LTI system		
29	Filter characteristics of linear system		
30	Distortion less transmission through LTI system		
31	Ideal LPF,HPF,BPF characteristics		
32	Relation between B.W and Rise time		

UNIT-IV CORRELATION AND SAMPLING THEOREM

CO4: Able to state sampling theorem and its applications

TB1: Signals and Systems by A.Anand Kumar,PHI

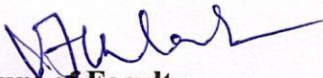
33	Auto and Cross Correlation function	From: 6/10/20 To: 19/10/20	Lecture interspersed with discussions
34	Properties of Correlation function		
35	Problems		
36	Energy density spectrum ,Parsevals theorem		
37	Power density spectrum, relation between auto and cross Correlation		
38	Detection of periodic signals in noise		
39	Extraction of signals from noise by filtering		
40	Introduction to sampling theorem		

41	Effect of under sampling, B.P sampling		
42	Related problems		
UNIT-IV LAPLACE TRANSFORMS AND Z-TRANSFORMS			
CO5: Able to Perform transformations on signals			
43	Introduction to LT	From: 20/10/20 To: 27/2/21	Lecture interspersed with discussions
44	Region of convergence		
45	ROC for various class of signals		
46	ROC for various class of signals		
47	problems		
48	Properties of Laplace Transform		
49	Properties of Laplace Transform		
50	Inverse Laplace Transform		
51	Inverse Laplace Transform		
52	Problems on ILT		
53	Relation between L.T and F.T		
54	L.T using wave form synthesis		
55	Concept of Z- Transform		
56	Region of convergence		
57	Constrains on ROC for various signals		
58	Inverse Z-transform		
59	Inverse Z-transform		
60	properties of Z-transforms		
61	Distribution between L.T , Z.T AND F.T, problems		

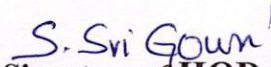
TB1: Signal and Systems by A. Anand Kumar, PHI

TB2: Signals and Systems - A.V. Oppenheim, A.S. Willsky and S.H.Nawab, PHI, 2nd Edn

TB3: Signals, Systems & Communications - B.P. Lathi, BS Publications, 2003.


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TENTATIVE LESSON PLAN: R1921044

Course Title: RANDOM VARIABLES AND STOCHASTIC PROCESS			
Section : Sec A & B		Date : 17/08/2020	
Revision No : 00		Prepared By : P.Raveendra	Approved By : HOD
Tools: ZOOM, PPTs(online)			
S NO:	TOPIC	Date	Mode of Delivery
UNIT-I THE RANDOM VARIABLE			
CO1: Able to know the most important distributions and their characteristics.			
TB1: PROBABILITY AND STOCHASTIC PROCESSES, Y.MALLIKARJUNA REDDY, Golden Era Publications.			
1	Introduction	17.08.2020	Online Class with ZOOM App
2	Definition of a Random Variable	19.08.2020	
3	Conditions for a Function to be Random Variable	20.08.2020	
4	Discrete, Continuous & Mixed Random Variables	21.08.2020	
5	Distribution and Density functions	21.08.2020	
6	Properties	24.08.2020	
7	Binomial, Poisson	24.08.2020	
8	Uniform, Gaussian	26.08.2020	
9	Exponential, Rayleigh	26.08.2020	
10	Conditional Distribution	27.08.2020	
11	Tutorial	27.08.2020	
12	Conditional Density	31.08.2020	
13	Properties	31.08.2020	
UNIT-II OPERATION ON ONE RANDOM VARIABLE – EXPECTATIONS			
CO2: Able to understand, analyze, and solve typical problems in operations on one random variable.			
TB1: PROBABILITY AND STOCHASTIC PROCESSES, Y.MALLIKARJUNA REDDY, Golden Era Publications.			
14	Introduction	02.09.2020	Online Class with ZOOM App
15	Expected Value of a Random Variable	03.09.2020	
16	Function of a Random Variable	03.09.2020	
17	Moments about the Origin, Central Moments	04.09.2020	
18	Variance and Skew	04.09.2020	
19	Chebychev's Inequality	05.09.2020	
20	Tutorial	08.09.2020	
21	Characteristic Function	08.09.2020	
22	Moment Generating Function	10.09.2020	
23	Transformations of a Random Variable	10.09.2020	
24	Monotonic Transformations for Random Variable	11.09.2020	
25	Non monotonic Transformations of Continuous Random Variable	11.09.2020	

UNIT-III MULTIPLE RANDOM VARIABLES

CO3: Able to know the distribution and density functions of multiple random variables and operations on multiple random variables.

TB1: PROBABILITY AND STOCHASTIC PROCESSES, Y.MALLIKARJUNA REDDY, Golden Era Publications.

26	Vector Random Variables	14.09.2020	Online Class with ZOOM App
27	Joint Distribution Function	14.09.2020	
28	Properties of Joint Distribution	14.09.2020	
29	Marginal Distribution Functions	16.09.2020	
30	Conditional Distribution and Density	16.09.2020	
31	Statistical Independence	18.09.2020	
32	Sum of Two Random Variables	18.09.2020	
33	Sum of Several Random Variables	25.09.2020	
34	Central Limit Theorem: Unequal Distribution, Equal Distributions	25.09.2020	
35	relationship between bandwidth and rise time	25.09.2020	
36	Tutorial	26.09.2020	
37	OPERATIONS ON MULTIPLE RANDOM VARIABLES		
38	Joint Moments about the Origin	26.09.2020	
39	Joint Central Moments	29.09.2020	
40	Joint Characteristic Functions	29.09.2020	
41	Jointly Gaussian Random Variables		
42	Two Random Variables case	01.10.2020	
43	N Random Variables case	01.10.2020	
44	Properties	03.10.2020	
45	Transformations of Multiple Random Variables	03.10.2020	
46	Linear Transformations of Gaussian Random Variables	03.10.2020	

UNIT-IV RANDOM PROCESSES – TEMPORAL CHARACTERISTICS

CO4: An ability to characterize stochastic processes with an emphasis on stationary random processes.

TB1: PROBABILITY AND STOCHASTIC PROCESSES, Y.MALLIKARJUNA REDDY, Golden Era Publications.

47	The Random Process Concept	05.10.2020	Online Class with ZOOM App
48	Classification of Processes	05.10.2020	
49	Deterministic and Non deterministic Processes	05.10.2020	
50	Distribution and Density Functions	07.10.2020	
51	Concept of Stationary and Statistical Independence	07.10.2020	
52	First-Order Stationary Processes	07.10.2020	
53	Second- Order and Wide-Sense Stationary	08.10.2020	
54	Nth-order and Strict-Sense Stationarity	08.10.2020	
55	Time Averages and Ergodicity	08.10.2020	

56	Autocorrelation Function and its Properties	09.10.2020	
57	Cross-Correlation Function and its Properties	09.10.2020	
58	Tutorial	12.10.2020	
59	Covariance Functions	12.10.2020	
60	Gaussian Random Processes	12.10.2020	
61	Poisson Random Process	12.10.2020	
UNIT-V RANDOM PROCESS-SPECTRAL CHARACTERISTICS			
CO5: An ability to characterize stochastic processes with an emphasis on stationary random Processes. Able to know the response of linear system for random inputs.			
TB1: PROBABILITY AND STOCHASTIC PROCESSES, Y.MALLIKARJUNA REDDY, Golden Era Publications.			
62	The Power Spectrum	14.10.2020	Online Class with ZOOM App
63	Properties	14.10.2020	
64	Relationship between Power Spectrum and Autocorrelation Function	15.10.2020	
65	The Cross-Power Density Spectrum	16.10.2020	
66	Properties	17.10.2020	
67	Tutorial	19.10.2020	
68	Relationship between Cross-Power Spectrum and Cross-Correlation Function	21.10.2020	
69	Random Signal Response of Linear Systems	22.10.2020	
70	System Response	22.10.2020	
71	Convolution	23.10.2020	
72	Mean and Mean-squared Value of System Response	26.10.2020	
73	Autocorrelation Function of Response	28.10.2020	
74	Cross-Correlation Functions of Input and Output	29.10.2020	
75	Spectral Characteristics of System Response	31.10.2020	
76	Power Density Spectrum of Response	02.11.2020	
77	Cross-Power Density Spectra of Input and Output	03.11.2020	
79	Band pass, Band-Limited and Narrowband Processes	05.11.2020	
80	Properties	06.11.2020	

TB1: PROBABILITY AND STOCHASTIC PROCESSES, Y.MALLIKARJUNA REDDY, Golden Era Publications.

TB2: PROBABILITY, RANDOM VARIABLES & RANDOM SIGNAL PRINCIPLES, PEYTONZ. PEEBLES, TMH, 4th Edition, 2001.

TB3: PROBABILITY, RANDOM VARIABLES AND STOCHASTIC PROCESSES, ATHANASIOSPAPOULIS AND S.UNNIKRISHA, PHI, 4th Edition, 2002.

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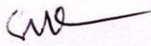
TENTATIVE LESSON PLAN: R1921045

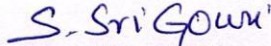
Course Title: OOPS Through JAVA		
Section : A & B	Date: 17-08-2020	Page No: 1 of 2
Revision No:	Prepared by : CH SIVA RAJESH	Approved by : HOD


Tools : PPTs

No. of periods	Topics	Date	Mode of Delivery
UNIT-I Basics of Object Oriented Programming (OOP)			
CO1 : Understanding the basics of Programming			
TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford			
1	Basics of Java programming	8/17/2020	Online Class with ZOOM App
2	Data types	8/18/2020	
3	Variables	8/19/2020	
4	Operators	8/22/2020	
5	Control structures including selection, Looping	8/24/2020	
6	Overloading	8/25/2020	
7	Arrays in java	8/30/2020	
8	Basics of objects and classes in java	9/1/2020	
9	Constructors	9/3/2020	
10	Finalizer, Visibility modifiers	9/4/2020	
11	Methods and objects	9/5/2020	
12	Inbuilt classes like String, Character, StringBuffer	6,8/09/2020	
13	File, this reference.	9/8/2020	
UNIT-II JAVA Basics			
CO1 : Understanding the inheritance and its types			
TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford			
14	Inheritance in java	9/10/2020	Online Class with ZOOM App
15	Super and sub class	9/10/2020	
16	Overriding	9/11/2020	
17	Object class	9/12/2020	
18	Polymorphism	9/14/2020	
19	Dynamic binding	9/15/2020	
20	Generic programming	9/16/2020	
21	Casting objects, Instance of operator	9/17/2020	
22	Abstract class	9/19/2020	
23	Interface in java	9/21/2020	
24	Package in java	9/22/2020	
25	UTIL package	9/24/2020	
UNIT-III Inheritance			
CO1 : Understanding how to work with GUI components			
TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford			
26	Event handling in java	9/24/2020	
27	Mouse and key events	9/25/2020	
28	GUI Basics, Panels, Frames	9/28/2020	

29	Layout Managers	10/4/2020	
30	Buttons, Check Boxes, Radio Buttons	12,13/10/2020	
31	Labels, Text Fields, Text Areas	10/15/2020	
32	Combo Boxes, Lists	10/16/2020	
33	Scroll Bars, Sliders	10/17/2020	
34	Windows, Menus, Dialog Box	10/19/2020	
35	Applet and its life cycle	10/20/2020	
36	Creating a swing applet	10/21/2020	
UNIT-IV I/O programming			
CO1 : Understanding how to write and read data to and from the files.			
TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford			
37	Text and Binary I/O	10/23/2020	Online Class with ZOOM App
38	Binary I/O classes	10/24/2020	
39	Object I/O	10/26/2020	
40	Random Access Files	10/27/2020	
41	Event driven model	10/27/2020	
42	handling events	10/28/2020	
UNIT-V Multithreading in java			
CO1 : Understanding how to create threads and how to start the threads			
TB:: Programming in JAVA, Sachin Malhotra, Saurabh Choudary, Oxford			
43	Thread life cycle and methods	10/31/2020	Online Class with ZOOM App
44	Runnable interface	11/2/2020	
45	Thread synchronization	11/3/2020	
46	Exception handling with try-catch-finally	11/4/2020	
47	Collections in java	11/5/2020	
48	JavaBeans and Network Programming	9,10/11/2020	


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TENTATIVE LESSON PLAN: R1921026
MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS

Course Title: MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS(R1921026)		
Section: ECE-A & B	Date: 2/11/2020	Page No: 01 of 03
Revision No: 00	Prepared By: SRINIVAS.V	Approved By: HOD

Tools: ZOOM App, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I INTRODUCTION TO MANAGERIAL ECONOMICS			
CO1: To acquaint the student with basic knowledge of managerial economics, managerial decision areas, basic economics tools, concept of demand, law of demand, elasticity of demand, types of elasticity measurements of elasticity and demand forecasting.			
TB: A.R. Arya Sri, “Managerial Economics & Financial Analysis”, 2005, TMH.			
1.	Introduction to Managerial Economics, Definitions, Characteristics of ME	02-11-2020	Online Class with ZOOM App
2.	Nature and Scope of Managerial Economics	03-11-2020	
3.	Managerial Economics related to Other Areas	04-11-2020	
4.	Basic Economic Tools in ME	05-11-2020	
5.	Introduction to Demand – Meaning & Definition, Features of Demand	06-11-2020	
6.	Determinants of Demand	07-11-2020	
7.	Law of Demand & Its exceptions, Demand Function	08-11-2020	
8.	Introduction to Elasticity of Demand	09-11-2020	
9.	Types of Elasticity of Demand	10-11-2020	
10.	Types of price Elasticity of Demand	11-11-2020	
11.	Measurement of Price Elasticity of Demand	12-11-2020	
12.	Introduction: Demand Forecasting	13-11-2020	
13.	Importance of Demand Forecasting	16-11-2020	
14.	Demand Forecasting Methods	17-11-2020	
UNIT –II PRODUCTION & COST ANALYSIS			
CO2: TO acquaint the student with basic knowledge of production, factors of production, various production functions, least cost combinations of inputs, cost concepts, breakeven analysis to avoid losses.			
TB: A.R. Arya Sri, “Managerial Economics & Financial Analysis”, 2005, TMH.			
15.	Introduction to Production: Meaning & Definition, Production Function	18/11/2020	Online Class with ZOOM App
16.	Factors of production, production function with one variable factor	19-11-2020	
17.	Law of Variable Proportions	20-11-2020	
18.	Factors of production, production function with two variable factors	21-11-2020	
19.	Concept of Iso-costs, Isoquants	23-11-2020	
20.	MRTS, Least Cost Combination	24-11-2020	

No. of Periods	TOPIC	DATE	Mode of Delivery
21.	Cobb-Douglas Production Function	25-11-2020	Online Class with ZOOM App
22.	Economies of Scale & diseconomies of scale	26-11-2020	
23.	Returns to Scale & returns to factors	27-11-2020	
24.	Concept of cost & Various Cost Concepts	30-11-2020	
25.	Introduction to Break Even Analysis	01-12-2020	
26.	Determination of Break Even Point with Graph	02-12-2020	
27.	Calculation of Break-Even Point (BEP) algebraic method	03-12-2020	
UNIT - III INTRODUCTION TO MARKETS, THEORIES OF THE FIRM AND PRICING POLICIES & FORMS OF BUSINESS ORGANIZATIONS AND BUSINESS CYCLE CO3: Gain knowledge about market, types of markets, competition, price determination under different market conditions, And various pricing methods. CO4: TO understand about business, types of business-like sole trader ship, partnership, joint stock companies, business cycle. TB: A.R. Arya Sri, "Managerial Economics & Financial Analysis", 2005, TMH.			
28.	Introduction to Markets: Meaning & Definition, Features	04-12-2020	Online Class with ZOOM App
29.	Types of markets, market structure	05-12-2020	
30.	Price Determination under perfect competition	07-12-2020	
31.	Equilibrium-point of firm and industry	08-12-2020	
32.	Price Determination under Monopoly	09-12-2020	
33.	Equilibrium-point of firm and industry in monopoly	10-12-2020	
34.	Price Determination under Monopolistic Competition	11-12-2020	
35.	Price Determination under Oligopoly	14-12-2020	
36.	Managerial Theories of the Firm	15-12-2020	
37.	Marries and Williamson theory of firm	16-12-2020	
38.	Pricing, pricing objectives.	17-12-2020	
39.	Various Methods of Pricing	18-12-2020	
40.	Introduction to Business: Definition, Features	19-12-2020	
41.	Sole Proprietorship: Features, Merits, Demerits	21-12-2020	
42.	Partnership: Features, Merits, Demerits, kinds of partners	22-12-2020	
43.	Joint Stock Company: Features, Merits, Demerits	23-12-2020	
44.	Public limited and private limited companies, features	24-12-2020	
45.	Public Enterprises: Features, Merits, Demerits	25-12-2020	
46.	Phases of Business Cycles	26-12-2020	

No. of Periods	TOPIC	DATE	Mode of Delivery
UNIT – IV INTRODUCTION TO FINANCIAL ACCOUNTING			
CO5: TO know and understand about accounting process, types of accounts, principles of accounting, preparation of journal, ledger, trail balance and final accounts with			
47.	Introduction to Accounting: Meaning & Definition, Classification of Accounts	28-12-2020	Online Class with ZOOM App
48.	Accounting Process	29-12-2020	
49.	Principles of accounting (GAAP)	30-12-2020	
50.	Accounting cycle	01/01/2021	
51.	Preparation of Journal: Problems	02/01/2021	
52.	Preparation of Ledger: Problems	04/01/2021	
53.	Preparation of Trail Balance: Problems	05/01/2021	
54.	Final Accounts (Trading, profit & loss A/C, Balance Sheet)	06/01/2021	
55.	Final Accounts with Adjustments	07/01/2021	
56.	Treatment of adjustments in preparation of final accounts.	08/01/2021	
57.	Introduction to Financial Statement Analysis: Importance, Objectives.	11/01/2021	Online Class with ZOOM App
58.	Classification of Ratios: Liquidity Ratios	12/01/2021	
59.	Classification of Ratios: Activity Ratios	13/01/2021	
60.	Classification of Ratios: Solvency Ratios	21/01/2021	
61.	Classification of Ratios: Profitability Ratios	22/01/2021	
62.	Preparation of Changes in Working Capital	23/01/2021	
63.	Preparation of Funds Flow Statement	01/02/2021	
64.	Preparation of Cash Flow Statement	02/02/2021	
UNIT – V CAPITAL, CAPITAL BUDGETING DECISIONS			
CO6: TO understand about Capital, types of capital, capital budgeting decisions, process of capital budgeting methods or techniques of capital budgeting.			
TB: A.R. Arya Sri, “Managerial Economics & Financial Analysis”, 2005, TMH			
No. of Periods	TOPIC	DATE	Mode of Delivery
67.	Introduction to Capital Budgeting: Meaning, Definition, Need.	03/02/2021 TO 04/02/2021	Online Class with ZOOM App
68.	Methods of Capital Budgeting: Pay Back Period (PBP),	05/02/2021 TO 08/02/2021	
69.	Calculation of Accounting Rate of Return (ARR)	09/02/2021 TO 10/02/2021	
70.	Calculation of Net Present Value (NPV)	11/02/2021 TO 12/02/2021	
71.	Calculation of Internal Rate of Return (IRR)	13/02/2021 TO 15/02/2021	
72.	Calculation of Profitability Index	17/02/2021 TO	

		18/02/2021
73.	Merits and Demerits of Capital Budgeting Techniques.	19/02/2021 TO 20/02/2021

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TENTAIVE LESSON PLAN: R1631041

Course Title: COMPUTER ARCHITECTURE & ORGANIZATION (R1631041)		
Section : A &B	Date : 17/8/2020	Page No : 01 of 03
Revision No : 00	Prepared By : B.S.S.TEJESH	Approved By : HOD

Tools : MS Teams, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I BASIC STRUCTURE OF COMPUTERS			
CO1: Student can understand the architecture of modern computers.			
TB :: Computer Organization, CARL HAMASCHER 5TH EDITION.			
1	Functional unit	17,18,19/8/20	Online Class with MS Teams
2	Basic operational concepts	20/8/20	
3	Bus structures	21,22/8/20	
4	System software	22,24/8/20	
5	Performance	25,26/8/20	
6	The history of the computer development	27/8/20	
UNIT –2 MACHINE INSTRUCTION AND PROGRAM			
CO2: Student can analyze the performance of a computer using performance equation			
TB :: Computer Organization, CARL HAMASCHER 5TH EDITION.			
7	Instruction and instruction sequencing	28/8/20	Online Class with MS Teams
8	Register transfer notation	29,31/8/20	
9	Assembly language notation	1-3/9/20	
10	Basic instruction types	4,5/9/20	
11	Addressing Modes	10-12/9/20	
12	The role of stacks and queues in computer programming equation	14/9/20	
13	Component of instructions	15/9/20	
14	Logic instructions	16,17/9/20	
15	Shift and rotate instructions, revision	18,19/9/20	
UNIT –III TYPES OF INSTRUCTIONS			
CO3: Student can understand the different instruction types.			
TB :: Computer Organization, CARL HAMASCHER 5TH EDITION.			
16	Arithmetic and logic instructions	21-24/9/20	Online Class with MS Teams
17	Branch instructions	25,26/9/20	
18	Addressing modes	28-30/9/20	
19	Input/Output operations and tutorials	1-3/10/20	

TENTATIVE LESSON PLAN: R1631041

Course Title: COMPUTER ARCHITECTURE AND ORGANIZATION (R1631041)

Section : A & B Date : 17/8/2020

Page No : 02 of 03

Revision No : 00 Prepared By : B.S.S.TEJESH

Approved By : HOD

Tools: MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –IV INPUT/OUTPUT ORGANIZATION			
CO4: Student can understand the effective address of an operand by addressing modes.			
TB :: Computer Organization, CARL HAMASCHER 5TH EDITION.			
20	Accessing I/O devices	13,14/10/20	Online Class with MS Teams
21	Interrupt hardware and tutorials	15,16/10/20	
22	Enabling and disabling interrupts	17/10/20	
23	Handling multiple devices	19/10/20	
24	Direct memory access	20,21/10/20	
25	Buses: Synchronous bus	22-24/10/20	
26	Asynchronous bus	26/10/20	
27	Interface circuits	27/10/20	
28	Standard I/O interface	28/10/20	
29	Peripheral component interconnect (PCI) bus	29,30/10/20	
UNIT - V THE MEMORY SYSTEM			
CO5 : Student can understand how computer stores positive and negative numbers			
TB TB :: Computer Organization, CARL HAMASCHER 5TH EDITION.			
31	Basic memory circuits	31/10/20	Online Class with MS Teams
32	Memory system consideration	2,3/11/20	
33	Read only memory (ROM)	4/11/20	
34	PROM, EPROM, EEPROM, Flash memory	5/11/20	
35	Cache memories	6,7/11/20	
36	Interleaving	9/11/20	
37	Mapping functions	10/11/20	
38	Magnetic hard disks	11/11/20	
39	Optical disks	12/11/20	
UNIT – VI PROCESSING UNIT AND MICRO PROGRAMMED UNIT			
CO6 : Understand of how a computer performs arithmetic operations of positive and negative numbers			
TB :: Computer Organization, CARL HAMASCHER 5TH EDITION..			
40	Fundamental concepts	13/11/20	Online Class with MS Teams
41	Register transfers	14/11/20	
42	Performing an arithmetic or logic operation	16/11/20	
43	Fetching a word from memory	17/11/20	
44	Execution of complete instruction		
45	Hardwired control	18/11/20	

TENTATIVE LESSON PLAN: R1631041

Course Title: COMPUTER ARCHITECTURE AND ORGANIZATION (R1631041)

Section : A & B

Date : 17/8/2020

Page No : 03 of 03

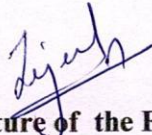
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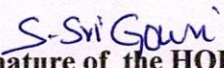
Prepared By : B.S.S.TEJESH

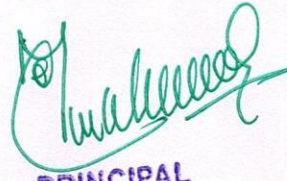
Approved By : HOD

Tools : MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
46	Microinstructions	19/11/20	
47	Micro program sequencing	20/11/20	
48	Wide branch addressing	21/11/20	
49	Microinstructions with next address field		


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Tentative Lesson Plan:R1631042

Course Title: LINEAR IC APPLICATIONS		
Section:A&B	Date : 17-08-2020	Page No : 01 of 03
Revision No : 00	Prepared By : B. RAVI	Approved By : HOD

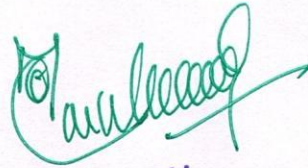
Tools: MS Teams, PPTs

S. No	TOPIC	Date	Mode of Delivery
UNIT –I Introduction to Operational Amplifier CO 1: Student will be able to analyze different issues related to the differential Amplifiers and Operational Amplifier T1: OP-AMPS and Linear Integrated Circuits, Ramakanth A Gayakwad, PHI. T2: Linear Integrated Circuits, D. Roy Choudary, Sahil B jain, New Age International.			
1	Introduction to integrated circuits	From: 17-8-2020 To: 28-8-2020	Online Class with MS Teams and Lecture interspersed with discussions
2	Differential amplifier and op amp and types		
3	DIBO Differential Amplifier- DC and AC analysis		
4	DIUBO Differential Amplifier- DC and AC analysis		
5	SIBO Differential Amplifier- DC and AC analysis		
6	SIUBO Differential Amplifier- DC and AC analysis		
7	DC Coupling		
8	Cascade Differential Amplifier		
9	Level translator		
10	Current Mirror		
UNIT –II OP–AMP Parameters CO 2: student can understand how to use op amp in real time applications. T1: OP-AMPS and Linear Integrated Circuits, Ramakanth A Gayakwad, PHI. T2: Linear Integrated Circuits, D. Roy Choudary, Sahil B jain, New Age International.			
11	Integrated circuits-Types-Classification,	From: 29-8-2020 To: 7-9-2020	Online Class with MS Teams and Lecture interspersed with discussions
12	Op-amp Block Diagram		
13	ideal Op-amp Specifications		
14	practical Op-amp Specifications		
15	DC and AC characteristics		
16	741 op-amp & its features		
17	Op-Amp parameters & Measurement-Input & Out put Off set voltages		
18	Op-Amp parameters & Measurement - currents		
19	Op-Amp parameters & Measurement -slew rate CMRR		
20	Op-Amp parameters & Measurement -PSRR		
21	Frequency Compensation techniques		
22	Problems		
UNIT - III Ideal Operational Amplifier Theory and Basic Circuits CO 3: Ability to use OP Amp as summer, Subtractor, Integrator and so. T1: OP-AMPS and Linear Integrated Circuits, Ramakanth A Gayakwad, PHI. T2: Linear Integrated Circuits, D. Roy Choudary, Sahil B jain, New Age International.			
23	Inverting and Noninverting amplifier	From: 9-9-2020	Lecture intersperse d with discussions
24	Scale changer, summer , average amplifier		
25	Integrator , differentiator		
26	Comparators,		
27	AC amplifier, Buffers		
28	Log Amplifier		
29	Anti log amplifier		
30	Instrumentation amplifier		

31	V to I, I to V converters,	To: 5-10-2020	Online Class with MS Teams and Lecture interspersed with discussions
32	Astable Multivibrators		
33	Monostable Multivibrators		
34	Triangular wave generator		
35	Square wave generator		
36	Precision diode, Full wave rectifier and Half wave rectifier		
37	Problems		
38	Problems		
UNIT - IV			
CO 4: Ability to use OP Amp as filters			
T2: Linear Integrated Circuits, D. Roy Choudary, Sahil B jain, New Age International.			
39	Active Filters – Introduction and Advantages	From: 6-10-2020 To: 20-10-2020	Online Class with MS Teams and Lecture interspersed with discussions
40	Design & Analysis of 1st order BW active filter-LPF		
41	Design & Analysis of 2nd order BW active filter-LPF		
42	Design & Analysis of 1st order BW active filter-HPF		
43	Design & Analysis of 2nd order BW active filter-HPF		
44	Design & Analysis of Narrow Band pass Filter		
45	Design & Analysis of Wide Band pass Filter		
46	Design & Analysis of Band reject Filter		
47	All pass filters, IC 1496		
48	Four Quadrant Multiplier, Sample & Hold circuits		
49	Problems		
50	Problems		
UNIT – V Wave Form Generator Using Op–Amps and PLL			
CO 5: Able to use OP Amp to generate different waveforms and as PLL, Timer.			
T1: OP-AMPS and Linear Integrated Circuits, Ramakanth A Gayakwad, PHI.			
51	Introduction to 555 timer-functional diagram	From: 22-10-2020 To: 28-12-2020	Online Class with MS Teams and Lecture interspersed with discussions
52	Monostable operations and applications		
53	Astable operations and applications		
54	PLL - introduction, block schematic, principles and description of individual blocks		
55	565 PLL		
56	Applications of PLL – frequency multiplication, frequency translation, AM, FM & FSK demodulators		
57	VCO (566)		
UNIT – VI D to A and A to D Convertors			
CO 6: Able to use OP Amp to as analog to digital and digital to analog converter.			
T2: Linear Integrated Circuits, D. Roy Choudary, Sahil B jain, New Age International.			
58	Introduction to DAC and ADC techniques	From: 29-12-2020	Online Class with MS Teams and Lecture interspersed with discussions
59	Weighted resistor DAC		
	R-2R ladder DAC	To: 12-2-2021	
	Inverted R-2R DAC		
	IC 1408 DAC		
	Parallel Comparator type ADC, Counter type ADC,		
	SAC DAC & Dual slope ADC		
	DAC and ADC Specifications		

	12 bit ADC- AD574		
	Problems		
	Revision		

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TENTATIVE LESSON PLAN: R1631043

Course Title: DIGITAL IC APPLICATIONS			
Section: A&B	Date : 17-08-2020	Page No : 01 of 03	
Revision No : 00	Prepared By : N.MAYURI	Approved By : HOD	
Tools: MS Teams, PPTs			
S. No	TOPIC	Date	Mode of Delivery
UNIT –I Digital Logic Families and Interfacing CO 1: Student will be able to Understand the structure of commercially available digital integrated circuit families T1: Digital Design Principles & Practices – John F. Wakerly, PHI/ Pearson Education Asia. T2: VHDL Primer – J. Bhasker, Pearson Education/ PHI, 3rd Edition.			
1	Introduction to logic families	From: 17-8-2020 To: 12-9-2020	Online Class with MS Teams and Lecture interspersed with discussions
2	CMOS logic		
3	CMOS steady state and dynamic electrical behavior		
4	CMOS logic families		
5	Bipolar logic,		
6	transistor-transistor logic,		
7	TTL families, CMOS/TTL interfacing		
8	low voltage CMOS logic and interfacing,		
9	Emitter coupled logic.		
10	TUTORIAL		
UNIT –II Introduction to VHDL CO 2: Student can Learn the IEEE Standard 1076 Hardware Description Language (VHDL) T2: VHDL Primer – J. Bhasker, Pearson Education/ PHI, 3rd Edition.			
11	Design flow	From: 15-9-2020 To: 7-10-2020	Online Class with MS Teams and Lecture interspersed with discussions
12	program structure, , levels of abstraction		
13	Elements of VHDL: Data types		
14	Data objects, operators and identifiers		
15	Packages, Libraries and Bindings		
16	Subprograms		
17	VHDL Programming using structural and data flow modeling.		
UNIT - III Behavioral Modeling: CO 3: Able to understand Model complex digital systems at several levels of abstractions, behavioral, structural, simulation, synthesis and rapid system prototyping T2: VHDL Primer – J. Bhasker, Pearson Education/ PHI, 3rd Edition.			
18	Behavioral Modeling: Process statement	From: 8-10-2020	Lecture interspersed with discussions Online Class with MS Teams and Lecture
19	Variable assignment statement,		
20	Signal Assignment Statement		
21	Wait Statement		
22	If Statement, Case Statement		
23	Null Statement, Loop Statement, Exit Statement		
24	Next Statement, Assertion Statement		
25	More on signal assignment statement, Inertial Delay Model		
26	Transport Delay Model, Creating Signal Waveforms		
27	Signal Drivers ,Other Sequential Statements		
28	Multiple Processes		
29	Logic Synthesis		
30	Inside a logic Synthesizer.		

31	Tutorial	To: 11-11-2020	intersperse d with discussions	
UNIT - IV Combinational Logic Design CO 4: Design and implementation of combinational and sequential digital logic circuits is explained. T1: Digital Design Principles & Practices – John F. Wakerly, PHI/ Pearson Education Asia.				
32	Combinational Logic Design: Binary Adder	From: 12-11-2020	Online Class with MS Teams and Lecture intersperse d with discussions	
33	Subtractor, Ripple Adder			
34	Look Ahead Carry Generator,Alu			
35	Encoders			
36	Decoders			
37	Multiplexers , Demultiplexers			
38	Parity Circuits, Comparators			
39	Barrel Shifter, Simple Floating-Point Encoder,			
40	Dual Priority Encoder			
41	Design Considerations Of The Above Combinational Logic Circuits With Relevant Digital Ics,			
42	Modeling Of Above Ics Using VHDL			To: 28-12-2020
43	Tutorial			
UNIT – V Sequential Logic Design CO 5: Students can Analyze and design basic digital circuits with combinatorial and sequential logic circuits using VHDL. T1: Digital Design Principles & Practices – John F. Wakerly, PHI/ Pearson Education Asia.				
44	Unit – 5 Sequential Logic Design: SSI Latches	From: 29-12-2020	Online Class with MS Teams and Lecture intersperse d with discussions	
45	And Flip Flops			
46	Ring Counter,			
47	Johnson Counter			
48	Design Of Modulus N Synchronous Counters			
49	Shift Registers			
50	Universal Shift Registers			
51	Design Considerations Of The Above Combinational Logic Circuits With Relevant Digital Ics, Modeling			
52	Tutorial			To: 09-01-2021
UNIT – VI Synchronous and Asynchronous Sequential Circuits CO 6: Students can Analyze and design basic digital circuits with combinatorial and sequential logic circuits using VHDL. RT1: Fundamentals of Digital Logic with VHDL Design- Stephen Brown, ZvonkoVranesic, McGrawHill, 3rd Edition.				
53	State Diagram	From: 11-01-2021	Online Class with MS Teams and Lecture intersperse d with discussions	
54	State Table, State Assignment			
55	Choice Of Flip Flops And Derivation Of Next State And Output Expressions			
56	Timing Diagram.			
57	Assignment Problem: One Hot Encoding.			
58	Mealy And Moore Type FSM For Serial Adder			
59	VHDL Code For The Serial Adder.			
60	Analysis Of Asynchronous Circuits, State Reduction			
61	State Assignment			To: 12-2-2021

62	A Complete Design Example: The Vending Machine Controller		
63	Revision		

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TENTATIVE LESSON PLAN: R1631044

Course Title: DIGITAL COMUNICATIONS (R1631044)		
Section : Sec A& B	Date : 12/08/2020	Page No : 01 of 03
Revision No : 00	Prepared By : Dr S Sri Gowri	Approved By : HOD

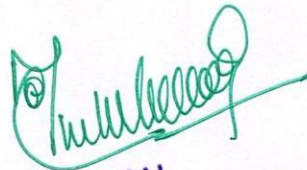
Tools: Black board, power-point presentation

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I Pulse Digital Modulation CO1:: Understand the working of Pulse Digital Modulations such as PCM, DPCM and DM. TB :: 1. Communication Systems - Simon Haykin, John Wiley, 3/e. 2. Digital communications - Simon Haykin, John Wiley, 2005			
1.	Elements of digital communication systems	17/08/2020	Lecture interspersed with discussions Online teaching
2.	Advantages of digital communication systems	18/08/2020	
3.	Elements of PCM: Sampling	19/08/2020	
4.	Quantization and coding	20/08/2020	
5.	Line Coding Quantization error	24/08/2020	
6.	Companding in PCM systems	25/08/2020	
7.	Differential PCM	26/08/2020	
8.	Delta Modulation and its drawbacks	27/08/2020	
9.	Adaptive Delta Modulation	28/08/2020	
10.	Adaptive Delta Modulation	28/08/2020	
11.	Comparison of PCM and DM systems	29/08/2020	
12.	Noise in PCM and DM systems	31/08/2020	
UNIT –II Digital Modulation Techniques CO2:: Learn various digital passband modulations techniques such as ASK, FSK, PSK, QPSK,DPSK and M-ary modulation techniques. TB :: 1. Communication Systems - Simon Haykin, John Wiley, 3/e. 2. Digital communications - Simon Haykin, John Wiley, 2005. 3. Communication Systems-Analog & Digital – Singh & Sapre, TMH, 2004.			
13.	Introduction	01/09/2020	Lecture interspersed with discussions Online teaching
14.	ASK	02/09/2020	
15.	PSK	03/09/2020	
16.	FSK	04/09/2020	
17.	DPSK	05/09/2020	
18.	DEPSK	07/09/2020	
19.	QPSK	08/09/2020	
20.	M ary modulations ,comparisons of BPSK,BFSK	09/09/2020	
UNIT - III Data Transmission CO3:: Analyze the probability of error of various Digital Modulation systems TB :: 1. Communication Systems - Simon Haykin, John Wiley, 3/e. 2. Digital communications - Simon Haykin, John Wiley, 2005			
21.	Baseband signal receiver	10/09/2020	Lecture interspersed with discussions Online teaching
22.	Probability of error	11/09/2020	
23.	The optimum filter	14/09/2020	

24.	Matched filter	15/09/2020	Lecture interspersed with discussions Online teaching
25.	Matched filter	15/09/2020	
26.	Probability of error using Matched filter	16/09/2020	
27.	Coherent reception	17/09/2020	
28.	Non-coherent detection of FSK	18/09/2020	
29.	Calculation of error probability of ASK	19/09/2020	
30.	Calculation of error probability of BPSK	21/09/2020	
31.	Calculation of error probability of BFSK	22/09/2020	
32.	Calculation of error probability of QPSK	23/09/2020	
No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I V Information Theory			
CO4:: Understand the concepts of Information Theory and the need for source coding.			
TB :: 1. Communication Systems - Simon Haykin, John Wiley, 3/e.			
33.	Discrete messages, Concept of amount of information	24/09/2020	Lecture interspersed with discussions Online teaching
34.	Properties of information and proofs	25/09/2020	
35.	Average Information, Entropy & its properties	26/09/2020	
36.	Proofs and properties of Information	28/09/2020	
37.	Information rate	29/09/2020	
38.	Mutual Information and its properties, proofs	01/10/2020	
39.	Problems	01/10/2020	
UNIT –V Source Coding			
CO5:: Learn the theorems governing the transmission of information over a noisy channel and perform the efficiency calculations.			
TB :: 1. Communication Systems - Simon Haykin, John Wiley, 3/e.			
40.	Source coding Introduction, Advantages	05/10/2020	Lecture interspersed with discussions Online teaching
41.	Shannon's Theorem advantages	05/10/2020	
42.	Shannon-Fano Coding	06/10/2020	
43.	Problems	07/10/2020	
44.	Huffman Coding	08/10/2020	
45.	Problems	09/10/2020	
46.	Average length Entropy and Efficiency calculations	13/10/2020	
47.	Discrete Memory less channels	13/10/2020	
48.	Binary symmetric channels	13/10/2020	
49.	Channel capacity of discrete and analog channels	14/10/2020	
50.	Capacity of a Gaussian channel	15/10/2020	
51.	Channel capacity theorem	19/10/2020	
52.	Bandwidth-S/N trade-off	19/10/2020	
UNIT - VI Linear Block Codes and Convolution Codes			
CO6:: Perform channel coding using linear block codes, cyclic codes and convolution codes.			
TB :: 1. Communication Systems - Simon Haykin, John Wiley, 3/e.			
53.	Introduction to Linear Block Codes	20/10/2020	

54.	Encoding of linear block codes	21/10/2020	Lecture interspersed with discussions Online teaching
55.	Decoding of LBC, Syndrome calculation	22/10/2020	
56.	Error detection and correction capabilities of LBC	23/10/2020	
57.	Hamming codes	26/10/2020	
58.	Error detection and correction of Hamming codes	26/10/2020	
59.	Binary cyclic codes introduction	27/10/2020	
60.	Encoding	28/10/2020	
61.	Algebraic structure of Cyclic codes Trees	29/10/2020	
62.	Trellis	9/12/2020	
63.	Viterbi Algorithm	10/12/2020	
64.	Problems	15/12/2020	
65.	Introduction to Convolution codes	17/12/2020	
66.	Encoding of Convolution Codes	19/12/2020	
67.	Decoding of Convolution codes, Syndrome calculation	19/12/2020	
68.	Hamming Codes	21/12/2020	
69.	Problems on LBC	22/12/2020	
70.	Problems on Convolution codes	24/12/2020	
71.	Revision	26/12/2020	

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TENTATIVE LESSON PLAN: R1631045 ANTENNAS AND WAVE PROPAGATION

Course Title: ANTENNAS AND WAVE PROPAGATION		
Section : Sec A & B	Date : 17/08/2020	Page No : 01 of 04
Revision No : 00	Prepared By : N.V.K Mahalakshmi	Approved By : HOD

Tools: MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I ANTENNA FUNDAMENTALS			
CO1: Identify basic antenna parameters			
TB: Antenna Theory-C.A. Balanis”, John Wiley and Sons, 2nd Edition, 2001.			
1	Antenna Fundamentals	17/8/2020	Online Class with MS Teams
2	Radiation Mechanism – single wire, 2 wire, dipoles	18/8/2020	
3	Antenna Parameters - Radiation Patterns	19/8/2020	
4	Patterns in Principal Planes, Main Lobe and Side Lobes	20/8/2020	
5	Beam widths, Polarization	21/8/2020	
6	Beam Area, Radiation Intensity	24/8/2020	
7	Beam Efficiency, Directivity	25/8/2020	
8	Gain and Resolution	26/8/2020	
9	Antenna Apertures, Aperture Efficiency, polarization	27/8/2020	
10	Effective Height	28/8/2020	
11	Current Distribution on a thin wire antenna	28/8/2020	
12	Tutorial	29/8/2020	
UNIT-II THIN LINEAR WIRE ANTENNAS			
CO2: Design and analyze wire antennas and loop antennas & Quantify the fields radiated by various types of antennas			
TB: Antenna Theory-C.A. Balanis”, John Wiley and Sons, 2nd Edition, 2001.			
13	Retarded Potentials	31/8/2020	Online Class with MS Teams
14	Radiation from Small Electric Dipole	31/8/2020	
15	Quarter wave Monopole and Half wave Dipole	1/9/2020	
16	Current Distributions, Evaluation of Field Components	2/9/2020	
17	Power Radiated, Radiation Resistance, Beam widths, Directivity	3/9/2020	
18	Effective Area and Effective Height	4/9/2020	
19	Natural current distributions	5/9/2020	
20	fields and patterns of Thin Linear Center-fed Antennas of different lengths	7/9/2020	

No. of Periods	TOPIC	Date	Mode of Delivery
21	Radiation Resistance at a point which is not current maximum	8/9/2020	
22	Antenna Theorems – Applicability and Proofs for equivalence of directional characteristics	9/9/2020 9/9/2020	
23	Loop Antennas: Small Loops - Field Components.	10/9/2020	
24	Concept of short magnetic dipole, D and R_r relations for small loops	11/9/2020	
25	Tutorial	12/9/2020	
UNIT-III ANTENNA ARRAYS			
CO3: Design and analyze antenna arrays			
TB: Antenna Theory-C.A. Balanis”, John Wiley and Sons, 2nd Edition, 2001.			
26	2 element arrays – different cases	14/9/2020	Online Class with MS Teams
27	Principle of Pattern Multiplication	15/9/2020	
28	N element Uniform Linear Arrays – Broadside, End- fire Arrays	16/9/2020	
29	EFA with Increased Directivity	17/9/2020	
30	Derivation of their characteristics and comparison	18/9/2020	
31	Concept of Scanning Arrays. Directivity Relations (no derivations).	19/9/2020 21/9/2020	
32	Binomial Arrays	22/9/2020	
33	Effects of Uniform and Non-uniform Amplitude Distributions, Design Relations	23/9/2020 24/9/2020	
34	Arrays with Parasitic Elements, Yagi-Uda Arrays	25/9/2020	
35	Folded Dipoles and their characteristics.	26/9/2020	
36	Tutorial	26/9/2020	
UNIT-IV NON-RESONANT RADIATORS			
CO4: Design and analyze long wire antennas, microstrip antennas and helical antennas			
TB: Antenna Theory-C.A. Balanis”, John Wiley and Sons, 2nd Edition, 2001.			
37	Introduction, Traveling wave radiators– basic concepts	2/11/2020	Online Class with MS Teams
38	Long wire antennas – field strength calculations and patterns	3/11/2020	
39	Microstrip Antennas- Introduction, Features, Advantages and Limitations	4/11/2020 5/11/2020	
40	Rectangular Patch Antennas – Geometry and Parameters, Impact of different parameters on characteristics	6/11/2020 7/11/2020	

No. of Periods	TOPIC	Date	Mode of Delivery
41	Helical Antennas – Significance, Geometry, basic properties	9/11/2020 10/11/2020	
42	Design considerations for monofilar helical antennas in Axial Mode and Normal Modes (Qualitative Treatment).	11/11/2020 12/11/2020	
43	Tutorial	13/11/2020	
UNIT-V VHF, UHF AND MICROWAVE ANTENNAS			
CO5: Design and analyze reflector antennas, lens antennas, horn antennas and Analyze antenna measurements to assess antenna's performance			
TB: Antenna Theory-C.A. Balanis”, John Wiley and Sons, 2nd Edition, 2001.			
44	Reflector Antennas: Flat Sheet and Corner Reflectors	5/10/2020	Online Class with MS Teams
45	Paraboloidal Reflectors – Geometry, characteristics, types of feeds	6/10/2020 7/10/2020	
46	F/D Ratio, Spill Over, Back Lobes, Aperture Blocking	8/10/2020 9/10/2020	
47	Off-set Feeds, Cassegrain Feeds	10/10/2020	
48	Horn Antennas – Types, Optimum Horns	11/10/2020	
49	Design Characteristics of Pyramidal Horns	12/10/2020	
50	Lens Antennas – Geometry, Features	13/10/2020	
51	Dielectric Lenses and Zoning, Applications	14/10/2020	
52	Antenna Measurements – Patterns Required, Set Up, Distance Criterion	15/10/2020	
53	Directivity and Gain Measurements	16/10/2020	
54	Tutorial	17/10/2020	
UNIT-VI WAVE PROPAGATION			
CO6: Identify the characteristics of radio wave propagation.			
TB: “Antennas and Wave Propagation”, K.D. Prasad, Satya Prakashan, Tech India Publications, New Delhi, 2001.			
55	Concepts of Propagation – frequency range, Types of propagation, Ground Wave Propagation	19/10/2020	Online Class with MS Teams
56	Wave Tilt, Flat and Spherical Earth Considerations	20/10/2020	
57	Formation of Ionospheric Layers and their Characteristics	21/10/2020	
58	Mechanism of Reflection and Refraction	21/10/2020	
59	Critical Frequency, MUF, Skip Distance, Calculations for flat and spherical earth cases	22/10/2020	
60	Optimum Frequency, LUHF, Virtual Height	23/10/2020	
61	Ionospheric Abnormalities, Absorption	26/10/2020	

No. of Periods	TOPIC	Date	Mode of Delivery
62	Fundamental Equation for Free Space Propagation, Basic Transmission Loss Calculations	27/10/2020	
63	Space Wave Propagation, LOS and Radio Horizon, Tropospheric Wave Propagation Radius of Curvature of path	28/10/2020	
64	Effective Earth's Radius, Effect of Earth's Curvature, Field Strength Calculations, M-curves	29/10/2020	
65	Duct Propagation, Tropospheric Scattering	30/10/2020	
66	Tutorial	31/10/2020	

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**TENTATIVE LESSON PLAN
RADAR SYSTEMS: R1641041**

Course Title: RADAR SYSTEMS		
Section : Sec A & B	Date :17/08/2020	Page No : 01 of 03
Revision No : 00	Prepared By : N.V.K Maha Lakshmi	Approved By : HOD

Tools: MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I BASICS OF RADAR			
CO1: Derive the radar range equation and to solve some analytical problems.			
TB: Introduction to Radar Systems – Merrill I. Skolnik, TMH Special Indian Edition, 2nd Ed., 2007.			
1	Introduction	17/8/2020	Online Class with MS Teams
2	Maximum Unambiguous Range, simple Radar range Equation	18/8/2020	
3	Radar Block Diagram and Operation	19/8/2020	
4	Radar Frequencies and Applications	20/8/2020	
5	Prediction of Range Performance	21/8/2020	
6	Minimum Detectable Signal, Receiver Noise	21/8/2020	
7	Radar Equation: Modified Radar Range Equation	24/8/2020	
8	SNR, probability of detection	25/8/2020	
9	probability of False Alarm, Integration of Radar Pulses	26/8/2020	
10	Radar Cross Section of Targets (simple targets - sphere, cone-sphere)	27/8/2020	
11	Creeping Wave, Transmitter Power	28/8/2020	
12	PRF and Range Ambiguities	28/8/2020	
13	System Losses (qualitative treatment)	31/8/2020	
14	Illustrative Problems	31/8/2020	
UNIT-II CW AND FREQUENCY MODULATED RADAR			
CO2: Understand the working of different types of radars and its applications; CW and FMCW radars			
TB: Introduction to Radar Systems – Merrill I. Skolnik, TMH Special Indian Edition, 2nd Ed., 2007.			
15	Doppler Effect, CW Radar – Block Diagram	1/9/2020	Online Class with MS Teams
16	Isolation between Transmitter and Receiver	2/9/2020	
17	Non-zero IF Receiver	3/9/2020	
18	Receiver Bandwidth Requirements, Applications of CW radar	4/9/2020 7/9/2020	
19	FM-CW Radar: Range and Doppler Measurement	8/9/2020, 9/9/2020	

No. of Periods	TOPIC	Date	Mode of Delivery
20	Block Diagram and Characteristics	10/9/2020	
21	FM-CW altimeter, Multiple Frequency CW Radar	11/9/2020	
22	Illustrative Problems	14/9/2020	
UNIT-III MTI AND PULSE DOPPLER RADAR			
CO3: Understand the working of different types of radars and its applications; MTI and pulse Doppler radars			
TB: Introduction to Radar Systems – Merrill I. Skolnik, TMH Special Indian Edition, 2nd Ed.2007			
23	Introduction, Principle	15/9/2020	Online Class with MS Teams
24	MTI Radar with - Power Amplifier Transmitter and Power Oscillator Transmitter	16/9/2020	
25	Delay Line Cancellers – Filter Characteristics	17/9/2020	
26	Blind Speeds, Double Cancellation	18/9/2020	
27	N th Cancellation Staggered PRFs	21/9/2020	
28	Range Gated Doppler Filters, MTI Radar Parameters, Limitations to MTI Performance	22/9/2020 23/9/2020	
29	MTI versus Pulse Doppler Radar	24/9/2020	
30	Illustrative Problems	25/9/2020	
UNIT-IV TRACKING RADAR			
CO4: Understand the concept of tracking and different tracking techniques.			
TB: Introduction to Radar Systems – Merrill I. Skolnik, TMH Special Indian Edition, 2nd Ed., 2007			
31	Tracking with Radar, Sequential Lobing	5/10/2020 6/10/2020	Online Class with MS Teams
32	Conical Scan, Mono pulse Tracking Radar	7/10/2020 8/10/2020	
33	Amplitude Comparison Mono pulse (one- and two- coordinates)	9/10/2020 12/10/2020	
34	Phase Comparison Mono pulse	13/10/2020	
35	Tracking in Range, Acquisition and Scanning Patterns	14/10/2020 15/10/2020	
36	Comparison of Trackers	16/10/2020	
UNIT-V DETECTION OF RADAR SIGNALS IN NOISE			
CO5: Understand the characteristics of a matched filter receiver and its Performance.			
TB: Introduction to Radar Systems – Merrill I. Skolnik, TMH Special Indian Edition, 2nd Ed., 2007			
37	Introduction, Matched Filter Receiver – Response Characteristics and Derivation	19/10/2020 20/10/2020	Online Class with MS Teams
38	Correlation detection, Cross-correlation Receiver	21/10/2020	
39	Efficiency of Non-matched Filters	26/10/2020	
40	Matched Filter with Non-white Noise	27/10/2020	
41	Noise Figure and Noise Temperature	28/10/2020	
42	Illustrative Problems	29/10/2020	

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-VI RADAR RECEIVERS			
CO6: Understand the various components of radar receiver and its performance.			
TB: Introduction to Radar Systems – Merrill I. Skolnik, TMH Special Indian Edition, 2nd Ed., 2007			
43	Displays – types	2/11/2020	Lecture interspersed with discussions
44	Duplexers – Branch type and Balanced type, Circulators as Duplexers	3/11/2020 4/11/2020	
45	Introduction to Phased Array Antennas – Basic Concepts	5/11/2020 6/11/2020	
46	Radiation Pattern, Beam Steering and Beam Width changes	9/11/2020 10/11/2020	
47	Series versus parallel feeds	11/11/2020	
48	Applications, Advantages and Limitations	12/11/2020	
49	Radomes	13/11/2020	

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TENTATIVE PLAN: R1641042

Course Title: DIGITAL IMAGE PROCESSING (R1641042)		
Section : A & B	Date : 18.03.2021	Page No : 01 of 04
Revision No : 00	Prepared By : A.V.P.Sarvari	Approved By : HOD

Tools : MS Teams , PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery	
UNIT –I INTRODUCTION AND IMAGE TRANSFORMS				
CO1: Student can perform different transforms on images useful for image processing applications.				
TB: R. C. Gonzalez and R. E. Woods, Digital Image Processing, 3rd edition, prentice Hall, 2008.				
1.	INTRODUCTION	17.8.2020	Online Class with MS Teams	
2,3.	Fundamental steps in digital image processing	18.8.2020		
4.	Components of an image processing system	20.8.2020		
5.	Image sensing and acquisition	21.8.2020		
6.	Image sampling and quantization	24.8.2020		
7.	Some basic relationships between pixels	25.8.2020		
8.	An introduction to the mathematical tools used in digital image processing	27.8.2020		
IMAGE TRANSFORMS				
9.	Need for image transforms	28.8.2020		
10.	Discrete Fourier transform of one variable	29.8.2020		
11.	Extension to functions of two variables	31.8.2020		
12.	Some properties of the 2-D DFT	31.8.2020		
13.	Importance of phase	1.9.2020		
14.	Discrete cosine transform	4.9.2020		
15.	Walsh transform	4,5.9.2020		
	Hadamard transform	7.9.2020		
16.	Haar transform	8.9.2020		
	Slant transforms			
17,18.	SVD and KL transforms or hotelling transform	11.9.2020		
19.	Radon transform	12.9.2020		
20.	Comparision of different image transforms			
UNIT – II INTENSITY TRANSFORMATIONS AND SPATIAL FILTERING, FILTERING IN THE FREQUENCY DOMAIN				
CO2: Able to perform spatial and frequency domain filtering on image and can implement all smoothing and sharpening operations on images.				
TB: R. C. Gonzalez and R. E. Woods, Digital Image Processing, 3rd edition, prentice Hall, 2008.				
21.	Background	15.9.2020	Online Class with MS Teams	
	Some basic intensity transformation functions			
22.	Histogram processing	16.9.2020		
23.	Fundamentals of spatial filtering	16.9.2020		
24.	Smoothing spatial filters	17.9.2020		

TENTATIVE PLAN: R1641042

Course Title: DIGITAL IMAGE PROCESSING (R1641042)		
Section : A & B	Date : 18.03.2021	Page No : 02 of 04
Revision No : 00	Prepared By : A.V.P.Sarvari	Approved By : HOD

Tools : MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
25.	Sharpening spatial filters	11.2.2021	Online Class with MS Teams
	Combining spatial enhancement methods		
26.	Preliminary concepts	6.10.20	
	The basic of filtering in the frequency domain		
27.	Image smoothing using frequency domain filters	7.10.20	
28.	Image sharpening using frequency domain filters	24.11.2020	
	Selective filtering		
29,30.	Tutorial	11.3.21	

UNIT –III IMAGE RESTORATION AND RECONSTRUCTION

CO3: Student can perform image restoration operations/techniques on images.

TB: R. C. Gonzalez and R. E. Woods, Digital Image Processing, 3rd edition, prentice Hall, 2008.

31.	A model of the image degradation/restoration process	25.11.2020	Online Class with MS Teams
32.	Noise models		
33.	Restoration in the presence of noise only spatial filtering	26.11.2020	
34.	Periodic noise reduction by frequency domain filtering		
35.	Linear, position invariant degradations	27.11.2020	
36.	Estimation the degradation function		
37.	Inverse filtering	28.11.2020	
38.	Minimum mean square error (mean) filtering	30.11.2020	
39.	Constrained least squares filtering		
40.	Geometric mean filtering		
41.	Image reconstruction from projections	1.12.2020	
42.	Tutorial	3.12.2020	

UNIT – IV WAVELETS AND MULTI-RESOLUTION PROCESSING, IMAGE COMPRESSION

CO5: Student can understand wavelet based image processing and image compression using Wavelets.

TB: R. C. Gonzalez and R. E. Woods, Digital Image Processing, 3rd edition, prentice Hall, 2008.

43.	Fundamentals	4,5.12.2020	Online Class with MS Teams
44.	Basic compression methods: Huffiman coding	7.12.2020	
45.	Golomb coding	8.12.2020	
46.	Arithmetic coding	28,29.12.2020	
47.	LZW coding		
48.	Run length coding	31.12.2020	
	Symbol based coding		

TENTATIVE PLAN: R1641042

Course Title: DIGITAL IMAGE PROCESSING (R1641042)		
Section : A & B	Date : 18.03.2021	Page No : 03 of 04
Revision No : 00	Prepared By : A.V.P.Sarvari	Approved By : HOD

Tools : MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
49.	Bit plane coding	1.10.2020	Online Class with MS Teams
50.	Block transform coding	3.10.2020	
51.	Predictive coding	5.10.2020	
52.	Image pyramids	6.10.2020	
53.	Sub band coding	8.10.2020	
54.	Multi resolution expressions	9.10.2020	
55.	Wavelet transforms in one dimensions	10.10.2020	
56.	Wavelet transforms in two dimensions		
57.	Wavelet coding	11.10.2020	

UNIT - V MORPHOLOGICAL IMAGE PROCESSING, IMAGE SEGMENTATION

CO6 : Student can perform all morphological operations on images and can be able to do image segmentation also.

TB : R. C. Gonzalez and R. E. Woods, Digital Image Processing, 3rd edition, prentice Hall, 2008.

58.	Fundamentals	6.11.2020	Online Class with MS Teams
59,60.	Point, line, edge detection	7.11.2020	
61.	Thresholding	13.11.2020	
62.	Region based segmentation		
63.	Preliminaries	16.11.2020	
64.	Erosion and dilation		
65.	Opening and closing	17.11.2020	
66.	Basic morphological algorithms for boundary extraction	19.11.2020	
67.	Thinning	20.11.2020	
68.	Grey scale morphology	21.11.2020	
69.	Segmentation using morphological watersheds	22.11.2020	

UNIT - VI COLOR IMAGE PROCESSING

CO4: Able to operate effectively on color images and different color conversions on images and can code images to achieve good compression.

TB: R. C. Gonzalez and R. E. Woods, Digital Image Processing, 3rd edition, prentice Hall, 2008.

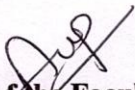
70.	Color fundamentals	3.12.2020	Online Class with MS Teams
71.	Color models	4,5.12.2020	
72.	Pseudo color image processing	7.12.2020	
	Basic of full color image processing		

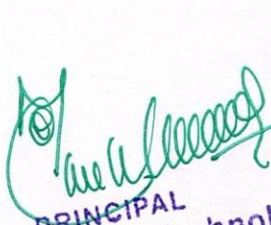
TENTATIVE PLAN: R1641042

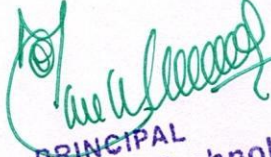
Course Title: DIGITAL IMAGE PROCESSING (R1641042)		
Section : A & B	Date : 18.03.2021	Page No : 04 of 04
Revision No : 00	Prepared By : A.V.P.Sarvari	Approved By : HOD

Tools : MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
73.	Color transformations	8.12.2020	Online Class with MS Teams
74.	Smoothing and sharpening		
75.	Image segmentation based on color	28,29.12.2020	
76.	Noise in color images	31.12.2020	
77.	Color image compression		
78.	Tutorial	1,3.2.2021	


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TENTATIVE LESSON PLAN: R1641043

Course Title: COMPUTER NETWORKS (R1641043)		
Section :Sec A & B	Date : 10/6/19	Page No : 01 of 03
Revision No : 00	Prepared By : G.SURYA PRAKASH	Approved By : HOD

Tools: MS Teams , power-point presentation

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I INTRODUCTION CO1:: Understand various network topologies required for communication, network architecture and some example networks. TB :: 1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI. 2. Data Communications and Networking – Behrouz A. Forouzan.Third Edition TMH.			
1	Introduction	11-06-19	Online Class with MS Teams
2	OSI	26-06-19	
3	TCP/IP	26-06-19	
4	Other Network Models	01-07-19	
5	Examples of Networks: Novell Networks	01-07-19	
6	Arpanet, Internet	24-06-19	
8	Network Topologies	24-06-19	
9	WAN, LAN, MAN	03-07-19	
10	Tutorial-Classification of Networks	01-07-19	
UNIT –II PHYSICAL LAYER CO1:: Understand the physical layer processes such as switching and encoding and the behavior of various transmission media,. TB :: 1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI. 2. Data Communications and Networking – Behrouz A. Forouzan, Third Edition TMH. 3. Data Communications and Networks – Achyut.S.Godbole, TMH.			
11	Transmission media, Copper	03-07-19	Online Class with MS Teams
12	Twisted Pair Wireless	03-07-19	
13	Switching and Encoding	04-07-19	
14	Asynchronous Communications	05-07-19	
15	Data Link layer Introduction, Error Detection & Correction, CRC	10-07-19	
16	ATM-Tutorial	07-07-19	
UNIT - III DATA LINK LAYER CO3:: Understand the general principles behind addressing, reliable transmission and other MAC protocols and basics of Ethernet. TB :: 1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI. 2. Data Communications and Networking – Behrouz A. Forouzan, Third Edition TMH.			
17	Introduction, Design Issues	11-07-19	Online Class with MS Teams
18	Framing	12-07-19	
19	Elementary Protocol-stop and wait	12-07-19	
20	Sliding Window	20-07-19	

UNIT –IV MEDIUM ACCESS CONTROL SUBLAYER**CO4:: Understand the general principles behind addressing, routing, reliable transmission and other MAC protocols with specific examples.****TB :: 1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI.
2. Data Communications and Networking – Behrouz A. Forouzan, Third Edition TMH.**

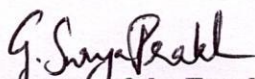
21	MAC Sub Layer: ALOHA	20-08-19	Online Class with MS Teams
22	Carrier Sense Multiple Access	21-18-19	
23	Ethernet-Classic Ethernet Physical Layer-Classic Ethernet MAC Sub layer Protocol-Ethernet Performance	27-08-19	
24	Wireless Lans-The 802.11 Architecture and Protocol Stack- The 802.11 Physical Layer	28-08-19	
25	The802.11 MAC Sub layer Protocol-The 805.11 Frame Structure-Services - Tutorial	30-08-19	

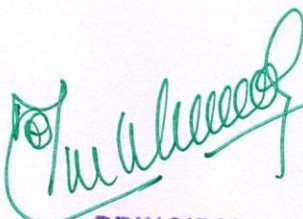
UNIT –V NETWORK LAYER**CO5:: Analyze various routing algorithms, congestion prevention policies and obtain an overview of the Internet.****TB :: 1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI.
2. Data Communications and Networking – Behrouz A. Forouzan, Third Edition TMH.**

26	Virtual Circuit & Datagram Subnets	10-09-19	Online Class with MS Teams
27	Routing algorithms - Shortest Path Routing	11-09-19	
28	Flooding, Hierarchical routing	12-09-19	
29	Broad cast, Multi cast, Distance Vector routing	12-09-19	
30	Dynamic Routing - Broadcast routing	13-09-19	
31	Rotary for mobility	13-09-19	
32	Congestion Control Algorithms – General Principles of Congestion prevention policies.	17-09-19	
33	The Network layer in the internet	19-09-19	
34	The Network layer in the ATM Networks-Tutorial	19-09-19	
35	Tutorial	20-09-19	

UNIT –VI TRANSPORT LAYER & APPLICATION LAYER**CO6:: Understand the transport layer services and study the TCP and UDP protocols.****Have an informed view of common Internet applications and protocols.****TB :: 1. Computer Networks — Andrew S Tanenbaum, 4th Edition. Pearson Education/PHI.
2. Data Communications and Networking – Behrouz A. Forouzan, Third Edition TMH.**

36	Transport Services	21-09-19	Online Class with MS Teams
37	Connection management	24-09-19	
38	TCP and UDP protocols	25-09-19	
39	TCP Congestion Control, Timer Management	25-09-19	
40	Domain name system	26-09-19	
41	Electronic Mail	27-09-19	
42	The World Web	27-09-19	
43	Multi Media.	28-09-19	
44	Tutorial	28-09-19	


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TENTATIVE LESSON PLAN: R1641044 OPTICAL COMMUNICATIONS

Course Title: OPTICAL COMMUNICATIONS		
Section : Sec A & B	Date : 17/8/20	Page No : 1 to 4
Revision No : 00	Prepared By : P.Koteswara Rao	Approved By : HOD

Tools:MS Teams, PPTs

S.NO.	TOPIC	Date	Mode of Delivery
UNIT –I OVERVIEW OF OPTICAL FIBER COMMUNICATION CO1: The necessary components required in modern Optical communications systems and build optical fiber experiments in the laboratory, and learn how to Calculate electromagnetic modes in waveguides TB: Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition, 3rd Edition, 2000			
1	Overview of optical fiber communication- Historical development	From: 17/08/2020 To: 02/09/2020	Online Class with MS Teams
2	The general system, advantages of optical fiber communications		
3	Optical fiber waveguides- Introduction, Ray theory transmission		
4	Total Internal Reflection, Acceptance angle Numerical Aperture, skew rays		
5	Cylindrical fibers, modes ,v-number		
6	Mode coupling, Step Index fibers		
7	Graded Index fibers, Single mode fibers		
8	Cut off wavelength, Mode Field Diameter		
9	Effective Refractive Index, Related problems.		

UNIT –II FIBER MATERIALS

CO2: The properties of optical fiber and the amount of light lost going through an Optical system, dispersion of optical fibers

TB : Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition, 3rd Edition, 2000

10	Fiber materials:- Glass, Halide, Active glass	From: 03/09/2020 To: 22/09/2020	Online Class with MS Teams
11	Chalgenide glass, Plastic optical fibers		
12	Signal distortion in optical fibers-Attenuation, Absorption		
13	Scattering and Bending losses		
14	Core and Cladding losses, Information capacity determination		
15	Group delay, Types of Dispersion:- Material dispersion		
16	Wave-guide dispersion, Polarization-Mode dispersion		
17	Intermodal dispersion, Pulse broadening in Graded index		
18	Related problems		

UNIT –III OPTICAL FIBER CONNECTORS

CO3: To know the principles of single and multi-mode optical fiber connectors and their characteristics

TB : Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition, 3rd Edition, 2000

19	Optical fiber Connectors-Connector types	From: 23/09/2020 To: 03/10/2020	Online Class with MS Teams
20	Single mode fiber connectors, Connector return loss		
21	Fiber Splicing- Splicing techniques		
22	Splicing single mode fibers, Fiber alignment & joint loss		
23	Multimode fiber joints, single mode fiber joints.		
24	Tutorial		

UNIT –IV OPTICAL SOURCES AND DETECTORS**CO4: The working of semiconductor lasers, and analyze the operation of LEDs, laser diodes****And also able to analyze the use of different types of photo detectors****TB : Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition,
3rd Edition, 2000**

25	Optical sources- LEDs, Structures	From: 05/10/2020 To: 23/10/2020	Online Class with MS Teams
26	Materials		
27	Quantum efficiency		
28	Power, Modulation, Power bandwidth product		
29	Injection Laser Diodes-Modes		
30	Threshold conditions, External quantum efficiency		
31	Laser diode rate equations		
32	Resonant frequencies		
33	Reliability of LED&ILD		
34	Optical detectors- Physical principles of PIN		
35	Physical principles of APD		
36	Detector response time, Temperature effect on Avalanche gain, Comparison of Photo detectors, Related problems		

UNIT – V SOURCE TO FIBER POWER LAUNCHING**CO5: To know the design of optical fiber communication and source to fiber power coupling.****TB : Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition, 3rd
Edition, 2000**

37	Source to fiber power launching - Output patterns	From: 26/10/2020 To: 07/11/2020	Online Class with MS Teams
38	Power coupling, Power launching		
39	Equilibrium Numerical Aperture, Laser diode to fiber coupling		
40	Optical receiver operation- Fundamental receiver operation		
41	Digital signal transmission, error sources		

42	Receiver configuration, Digital receiver performance		
43	Probability of Error, Quantum limit, Analog receivers		
<p>UNIT –VI OPTICAL SYSTEM DESIGN CO6: The ability to analyze, design, build, and demonstrate optical fiber experiments in the laboratory TB : Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition, 3rd Edition, 2000</p>			
44	Optical system design - Point-to- point links, Component choice and considerations	<p>From: 09/11/2020 To: 21/11/2020</p>	<p>Online Class with MS Teams</p>
45	Link power budget with examples		
46	Rise time budget with examples		
47	Line coding in Optical links, WDM		
48	Measurement of Attenuation		
49	Eye pattern		
50	Revision & Problems		
51	Revision & Problems		
52	Revision & Problems		
53	Revision & Problems		

TB : Optical Fiber Communications – Gerd Keiser, Mc Graw-Hill International edition, 3rd Edition, 2000

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TENTATIVE LESSON PLAN: R164104B

Course Title: ELECTRONIC SWITCHING SYSTEMS (R164104B)		
Section : Sec A & B	Date : 17-8-2020	Page No : 01 of 03
Revision No : 00	Prepared By : P RATNA BHASKAR	Approved By : HOD

Tools: MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I TELECOMMUNICATION SWITCHING SYSTEMS CO1:: Introduced telecommunication switching systems and operation of different switching Systems TB1: Tele communication switching system and networks - Thyagarajan Viswanath, PHI, 2000.			
1.	Evolution of Telecommunications	From: 17-8-2020 To: 29-8-2020	Online Class with MS Teams
2.	Simple Telephone Communication		
3.	Basics of Switching System		
4.	Manual Switching System		
5.	Major Telecommunication Networks		
6.	STROWGER SWITCHING SYSTEM		
7.	Signaling tones		
8.	Step by step switching system		
9.	Design parameters		
10.	Designs of 100 line exchange		
11.	Design with Uni selectors and Two motion selectors		
12.	CROSS BARSWITCHING		
13.	Principles of Common Control		
14.	Touch Tone Dial Telephone		
15.	Principles of Crossbar Switching		
16.	Crossbar Switch Configurations		
17.	Cross point Technology		
18.	Crossbar Exchange Organization		
19.	Tutorial.		
UNIT –III Time Division Switching CO3:: Obtained the knowledge of different Time Division Space Switching, Basic Time Division Time Switching and Combination Switching TB1: Telecommunication switching system and networks – Thyagarajan Viswanath, PHI 2000.			
20.	Basic Time Division Space Switching	From: 16-9-2020 To: 25-9-2020	Online Class with MS Teams
21.	Basic Time Division Time Switching Generalised time division Space switch		
22.	Basic Time division time switching: modes of operation		
23.	simple problems		
24.	Time Multiplexed Space Switching		
25.	Time Multiplexed Time Switching		
26.	Combination Switching		
27.	Time Space (TS) Switching		
28.	Space-time (ST) Switching		
29.	Three-Stage Combination Switching		
30.	n- Stage Combination Switching		
31.	Tutorial		

UNIT - II ELECTRONIC SPACE DIVISION SWITCHING

CO2:: Obtained the knowledge of different electronic Space Division switching systems.

TB1: Telecommunication switching system and networks – Thyagarajan Viswanath, PHI 2000.

No. of Periods	TOPIC	DATE	Mode of Delivery
32.	Stored Program Control	From: 31-8-2020 To: 15-9-2020	Online Class with MS Teams
33.	Centralized SPC		
34.	Distributed SPC		
35.	Software Architecture		
36.	Application Software, Enhanced Services		
37.	Two-Stage Networks		
38.	Three-Stage Networks, n- Stage Networks.		
39.	Tutorial		

UNIT -I V TELEPHONE NETWORKS

CO4:: Analyzed the performance of telecommunication network and implement the signaling technique In communication networks

TB3: Advanced Electronic Communications systems – Wayne Tomasi, PHI 2004.

40.	Subscriber Loop System	From: 8-11-2020 To: 27-11-2020	Online Class with MS Teams
41.	Switching Hierarchy and Routing		
42.	Transmission Plan, Transmission Systems		
43.	Numbering Plan and Charging Plan		
44.	Numbering Plan and Charging Plan		
45.	In-channel Signaling, Common Channel Signaling		
46.	CCITT Signaling System no.6		
47.	CCITT Signaling System no.7		
48.	Statistical Multiplexing		
49.	Local- Area and Wide- Area Networks		
50.	Broad band Networks,		
51.	Large scale networks		
52.	Large-scale Networks		

UNIT – V SWITCHING NETWORKS

CO5:: Gained understanding on different switching networks and information on Telecommunications Traffic

TB1: Telecommunication switching system and networks – Thyagarajan Viswanath, PHI 2000.

TB2: Telecommunications Switching, Traffic and Networks- J. E. Flood, 2006, Pearson Education

53	Single- Stage Networks		
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54	Grading, Link Systems	From 28-11-2020 To: 8-12-2020	Online Class with MS Teams
55	Grades of service of link systems		
56	Application of Graph Theory to link Systems		
57	Use of Expansion		
58	Call Packing		
59	Rearrange-able Networks		
60	Strict- Sense non-blocking Networks		
61	Sectionalized Switching Networks		
62	Tutorial		
63	The Unit of Traffic, Congestion, Traffic Measurement		
64	A Mathematical Model		
65	Lost-call Systems, Queuing Systems		

UNIT - VI INTEGRATED SERVICES DIGITAL NETWORK (ISDN)

CO6 : Obtained the knowledge of network architecture and its protocols and Introduced ISDN and BISDN services in existing data networks

TB1:: Telecommunication switching system and networks – Thyagarajan Viswanath, PHI 2000.

No. of Periods	TOPIC	DATE	Mode of Delivery
67	Introduction and Motivation	From: 24-12-2020 To: 29-1-2020	Online Class with MS Teams
68	New Services		
69	ISDN Network and Protocol architecture		
70	Transmission Channels		
71	User- Network Interfaces		
72	Signaling, Numbering and Addressing		
73	Service Characterization		
74	Interworking		
75	ISDN Standards		
76	Expert Systems in ISDN		
77	Broadband ISDN		
78	Voice Data Integration		
79	Tutorial		

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TENTATIVE LESSON PLAN: R164104D

Course Title: EMBEDDED SYSTEMS(R164104D)		
Section : A & B	Date : 17-08-2020	Page No :01 of 04
Revision No : 00	Prepared By :K.VENKATESWARA RAO	Approved By : HOD

Tools: MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I Introduction, Embedded systems CO1: Student can understand the basic introduction to EMBEDDED SYSTEMS TB :: Tammy Noergaard and Shibu.K.V-Tata McGraw Hill Education Private Limited, 2013 Edition “EMBEDDED SYSTEMS”			
1.	INTRODUCTION EMBEDDED SYSTEM-DEFINITION, HISTORY OF EMBEDDED SYSTEMS	17-08-20	Online Class with MS Teams
2.	CLASSIFICATION OF EMBEDDED SYSTEMS, MAJOR APPLICATION AREAS OF EMBEDDED SYSTEMS	18-08-20	
3.	PURPOSE OF EMBEDDED SYSTEMS	19-08-20	
4.	THE TYPICAL EMBEDDED SYSTEM-CORE OF THE EMBEDDED SYSTEM	21-08-20	
5.	THE TYPICAL EMBEDDED SYSTEM-CORE OF THE EMBEDDED SYSTEM	21-08-20	
6.	MEMORY	25-08-20	
7.	MEMORY-TYPES	26-08-20	
8.	SENSORS AND ACTUATORS	28-08-20	
9.	COMMUNICATION INTERFACE, EMBEDDED FIRMWARE	29-08-20	
10.	CHARACTERISTICS OF AN EMBEDDED SYSTEM	01-09-20	
11.	QUALITY ATTRIBUTES OF EMBEDDED SYSTEMS-TYPES	02-09-20	
12.	APPLICATION-SPECIFIC DOMAIN-SPECIFIC OF AN EMBEDDED SYSTEM.	03-09-20	
UNIT –II Embedded Hardware Design CO2: Able to develop components of Embedded Hardware Design TB: Tammy Noergaard and Shibu.K.V-Tata McGraw Hill Education Private Limited, 2013 Edition “EMBEDDED SYSTEMS”			
13.	ANALOG ELECTRONIC COMPONENTS	04-09-20	Online Class with MS Teams
14.	DIGITAL ELECTRONIC COMPONENTS	05-09-20	
15.	DIGITAL ELECTRONIC COMPONENTS	07-09-20	
16.	I/O TYPES AND EXAMPLES, SERIAL COMMUNICATION DEVICES	08-09-20	
17.	PARALLEL DEVICE PORTS, WIRELESS DEVICES	09-09-20	
18.	TIMER AND COUNTING DEVICES	11-09-20	

TENTATIVE LESSON PLAN: R164104D

Course Title: EMBEDDED SYSTEMS (R164104D)		
Section : A & B	Date : 17-08-2020	Page No :02 of 04
Revision No : 00	Prepared By :: K.VENKATESWARA RAO	Approved By : HOD

Tools : MS Teams, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –III Embedded Firmware Design			
CO3: Able to interface the design methodologies with Embedded Firmware			
TB : Tammy Noergaard and Shibu.K.V-Tata McGraw Hill Education Private Limited, 2013 Edition “EMBEDDED SYSTEMS”			
19.	EMBEDDED FIRMWARE DESIGN APPROACHES	14-09-20	Online Class with MS Teams
20.	EMBEDDED FIRMWARE DESIGN APPROACHES	15-09-20	
21.	EMBEDDED FIRMWARE DEVELOPMENT LANGUAGES	16-09-20	
22.	EMBEDDED FIRMWARE DEVELOPMENT LANGUAGES	18-09-20	
23.	ISR CONCEPT, INTERRUPT SOURCES	19-09-20	
24.	INTERRUPT SERVICING MECHANISM MULTIPLE INTERRUPTS	21-09-20	
25.	DMA	22-09-20 23-09-20	
26.	DEVICE DRIVER PROGRAMMING	26-09-20	
27.	CONCEPTS OF C VERSUS EMBEDDED C AND COMPILER VERSUS CROSS-COMPILER	26-09-20	
28.	TUTORIAL on QUALITY ATTRIBUTES OF EMBEDDED SYSTEMS-TYPES	28-09-20	
29.	TUTORIAL on PARALLEL DEVICE PORTS, WIRELESS DEVICES	29-09-20	
30.	TUTORIAL on EMBEDDED FIRMWARE DEVELOPMENT LANGUAGES	30-09-20	
UNIT –IV Real Time Operating System			
CO4: Student can understand the Real Time Operating System			
TB: Tammy Noergaard and Shibu.K.V-Tata McGraw Hill Education Private Limited,			
31.	OPERATING SYSTEM BASICS	03-10-20	Online Class with MS Teams
32.	TYPES OF OPERATING SYSTEMS	05-10-20	
33.	MULTIPROCESSING&MULTITASKING	06-10-20	
34.	MULTITASKING&MULTIPROCESSING	07-10-20	
35.	TASK SCHEDULING	06-11-20	
36.	THREADSPROCESSES AND SCHEDULING	07-11-20	

TENTATIVE LESSON PLAN: R164104D

Course Title: EMBEDDED SYSTEMS(R164104D)		
Section :A & B	Date : 17-08-2020	Page No :03of 04
Revision No : 00	Prepared By :K.VENKATESWARA RAO	Approved By : HOD

Tools: MS Teams, PPTs

No. of Periods	TOPIC	Date	
37.	TASK COMMUNICATION, TASK SYNCHRONISATION	11-11-20	Online Class with MS Teams
38.	DEVICE DRIVERS	16-11-20	
39.	FUNDAMENTAL ISSUES IN HARDWARE SOFTWARE CO-DESIGN		
40.	COMPUTATIONAL MODELS IN EMBEDDED DESIGN		
41.	HARDWARE SOFTWARE TRADE-OFFSINTEGRATION OF HARDWARE AND FIRMWARE	17-11-20	
42.	ICE	18-11-20	

UNIT –V Embedded System Development

CO5: Ability to understand the constrains in the Embedded System Development

TB: Tammy Noergaard and Shibu.K.V-Tata McGraw Hill Education Private Limited, 2013 Edition “EMBEDDED SYSTEMS”

43.	THE INTEGRATED DEVELOPMENTENVIRONMENT	20-11-20	Online Class with MS Teams
44.	DEASSEMBLER/DECOMPILER, SIMULATORS	21-11-20 21-11-20	
45.	TYPES OF FILES GENERATED ON CROSS-COMPILATION	23-11-20	
46.	EMULATORS&DEBUGGING	24-11-20	
47.	TARGET HARDWARE DEBUGGING,BOUNDARY SCAN	25-11-20	
48.	EMBEDDED SOFTWARE DEVELOPMENT PROCESS AND TOOLS	27-11-20	
49.	EMBEDDED SOFTWARE DEVELOPMENT PROCESS AND TOOLS	28-11-20	

TENTATIVE LESSON PLAN: R164104D

Course Title: EMBEDDED SYSTEMS (R164104D)		
Section : A & B	Date : 17-08-2020	Page No :04 of 04
Revision No : 00	Prepared By : : K.VENKATESWARA RAO	Approved By : HOD

Tools : MS Teams , PPTs

UNIT – VI Embedded System Implementation And Testing

CO6: Student can design the basic models of Embedded System Implementation and Testing

TB: : Tammy Noergaard and Shibu.K.V-Tata McGraw Hill Education Private Limited, 2013 Edition “EMBEDDED SYSTEMS”

No. of Periods	TOPIC	Date	
50.	THE MAIN SOFTWARE UTILITY TOOL, CAD AND THE HARDWARE	30-11-20	Online Class with MS Teams
51.	TRANSLATION TOOLS-PRE-PROCESSORS,INTERPRETERS	01-12-20	
52.	COMPILERS AND LINKERS	02-12-20	
53.	DEBUGGING TOOLS	04-12-20	
54.	QUALITY ASSURANCE AND TESTING OF THE DESIGN	05-12-20	
55.	TESTING ON HOST MACHINE	07-12-20	
56.	SIMULATORS ,LABORATORY TOOLS	08-12-20	
57.	TUTORIAL ON SIMULATORS	24-12-20	
58.	LABORATORY TOOLS	28-12-20	
59.	LABORATORY TOOLS	29-12-20	
60.	TUTORIAL ON SIMULATORS	02-01-21	

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