TENTATIVE LESSON PLAN: R1921021

Course Title: ELECTRICAL CIRCUIT ANALYSIS-II(R1921021)		
Section :	Date:17-08-2020	Page No: 1 of 2
Revision No:	Prepared by : Mr. S. Nageswara Rao	Approved by :HOD

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
	UNIT-I Balanced Three phase circuits **CO1 :Students are able to solve three-phase circuits under balanced and unbalanced condition** **TB:: Network Analysis By prof. B. N. Yoganarasimhan**		
1	Phase sequence	17-08-2020	Lecture interspersed with discussions
2	star and delta connection	19-08-2020	
3	relation between line and phasevoltages and currents in balanced	20-08-2020	
4	analysis of balanced three phasecircuits	21-08-2020	
5	measurement of active and reactive power in balanced three phas	22-08-2020	
6	Analysis of three phase unbalanced circuits:	24-08-2020	Lecture interspersed with discussions
7	Loop method	26-08-2020	
8	Star-Deltatransformation technique	27-08-2020	
9	Two wattmeter methods for measurement of threephase power.	28-08-2020	
10	Tutorial	29-08-2020	
	UNIT-II Transient Analysis in DC and AC circuits **CO2 :. Students are able to find the transient response of electrical networks for different types of excitations** **TB: CIRCUIT THEORY, S.SALIVAHANAN, S. PRAVIN KUMAR, VIKAS PUBLISHING HOUSE PVT LTD., NETWORK THEORY, N.SREENIVASULU, HI-TECH PUBLISHERS.**		
11	Transient response of R-L,for DC and AC excitations	31-08-2020	Lecture interspersed with discussions
12	Problems	02-09-2020	
13	Problems	03-09-2020	
14	Transient response of R-C,for DC and AC excitations	04-09-2020	
15	Problems	05-09-2020	
16	Transient response of R-L-C,for DC and AC excitations	07-09-2020	
17	Problems	09-09-2020	
18	Tutorial	10-09-2020	
19	Solution using differential equations and Laplace transforms	11-09-2020	
20	Problems		
	UNIT-III Two Port Networks **CO3 : Students are able to estimate the different types of two port network parameters.** **TB :: NETWORK ANALYSIS, K.SATYA PRASAD, S.SIVA NAGA RAJU, CENGAGE LEARNING.**		
21	Two port network parameters	14-09-2020	Lecture interspersed with discussions
22	Problems	16-09-2020	
23	Z parameters	17-09-2020	
24	Problems	18-09-2020	

25	Y parameters	19-09-2020	Lecture interspersed with discussions
26	Problems	21-09-2020	
27	Problems	23-09-2020	
28	ABCD parameters	24-09-2020	
29	hybrid parameters	25-09-2020	
30	problems	05-10-2020	
31	Z, Y, ABCD and hybrid parameters and their relations	07-10-2020	
32	Problems	08-10-2020	
33	Tutorial	09-10-2020	
34	Cascaded networks	10-10-2020	
35	poles and zeros of network functions.	12-10-2020	
36	Tutorial	14-10-2020	

UNIT-V Fourier Analysis

CO4 : Students are able to extract different harmonics components from the response of a electrical network.

TB :: CIRCUIT THEORY (ANALYSIS AND SYNTHESIS) BY A.CHAKRABARTHI, DHANPATI RAI & CO., ENGINEERING CIRCUIT ANALYSIS, W.H. HAYT, J.E. KEMMERLY, S.M. DURBIN, TMH PUBLISHERS, SIXTH EDITION.

37	Fourier theorem	15-10-2020	Lecture interspersed with discussions
38	Trigonometric form of Fourier series	16-10-2020	
39	tutorial	17-10-2020	
40	exponential form of Fourier series	19-10-2020	
41	Conditions of symmetry	21-10-2020	
42	Problems	22-10-2020	
43	line spectra and phase angle spectra	23-10-2020	
44	Analysis of electrical circuits to non sinusoidal periodic waveforms.	24-10-2020	
45	Problems	26-10-2020	

UNIT-V Fourier Transforms

CO5 : Students are able to extract different harmonics components from the response of a electrical network.

TB :: CIRCUIT THEORY (ANALYSIS AND SYNTHESIS) BY A.CHAKRABARTHI, DHANPATI RAI & CO., ENGINEERING CIRCUIT ANALYSIS, W.H. HAYT, J.E. KEMMERLY, S.M. DURBIN, TMH PUBLISHERS, SIXTH EDITION.

46	Fourier integrals and Fourier transforms	28-10-2020	Lecture interspersed with discussions
47	properties of Fourier transforms physical significance	30-10-2020	
48	of the fourier transform	02-11-2020	
49	Problems	04-11-2020	
50	Problems	05-11-2020	
51	Problems	06-11-2020	
52	Problems	07-11-2020	
53	Problems	09-11-2020	
54	application to electrical circuits.	12-11-2020	
55	Problems	13-11-2020	
56	Problems	14-11-2020	

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TENTATIVE LESSON PLAN (R1921022)

Course Title: Electrical Machines-I (R1921022)

Section :	**Date:17-08-2020**	**Page No: 1 of 3**
Revision No:	**Prepared by : N.E.K.CHANDRA**	**Approved by :HOD**

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I Construction and Operation of DC machines **CO1 : Able to mitigate the ill-effects of armature reaction and improve commutation in dc machines .** **TB:: Electrical Machines by P.S. Bhimbra, Khanna Publishers** **TB::Electric Machinery by A.E.Fitzgerald,Charles kingsley,Stephen D.Umans, TMH**			
1	Principle of operation of DC machine	17/8/20	Lecture interspersed with discussions
2	Construction	19/8/20	
3	Emf equation for generator	20/8/20	
4	Classification of DC machines based on excitation	21/8/20	
5	OCC of DC shunt generator	25/8/20	
6	Applications	26/8/20	
7	Armature reaction	27/8/20	
8	Armature reaction	28/8/20	
9	Characteristics of dc generators	29/8/20	
10	Characteristics of dc generators	1/9/2020	
UNIT-II Performance of DC Machines **CO2 : Able to understand the torque production mechanism and control the speed of dc motors.** **TB:: Electrical Machines by P.S. Bhimbra, Khanna Publishers** **TB::Electric Machinery by A.E.Fitzgerald,Charles kingsley,Stephen D.Umans, TMH**			
11	Introduction to DC motors	3/9/2020	Lecture interspersed with discussions
12	Torque and back-emf equations of dc motors	4/9/2020	
13	Armature reaction	5/9/2020	
14	commutation	8/9/2020	
15	characteristics of separately-excited motors	9/9/2020	
16	shunt, series and compound motors	10/9/2020	
17	losses and efficiency-	11/9/2020	
18	applications of dc motors.	15/9/20	
19	Problems	16/9/20	
20	Problems	17/9/20	
UNIT-III Starting, Speed Control and Testing of DC Machines **CO3 :Able to understand the Starting,Testing and Control the speed of dc motors .** **TB:: Electrical Machines by P.S. Bhimbra, Khanna Publishers** **TB:: Electric Machinery by A.E.Fitzgerald,Charles kingsley,Stephen D.Umans, TMH**			
21	Necessity of starter	18/9/20	
22	Starting by 3 point starter	19/9/20	

23	Starting 4 point starter	22/9/20	Lecture interspersed with discussions
24	Problems	23/9/20	
25	Speed control by armature and field control method	24/9/20	
26	Speed control by voltage control method	25/9/20	
27	testing of DC machines	26/9/20	
28	brake test	29/9/20	
29	Swinburne's method	30/9/20	
30	principle of regenerative or Hopkinson's method	1/10/2020	
31	retardation test	3/10/2020	
32	Problems	6/10/2020	
33	Problems	7/10/2020	
34	seperation of losses.	8/10/2020	
35	Problems	9/10/2020	

UNIT-IV Single-phase Transformers
CO4 : Able to predetermine regulation, losses and efficiency of single phase transformers.
TB ::Electrical Machines by P.S. Bhimbra, Khanna Publishers
TB :: Electric Machinery by A.E.Fitzgerald,Charles kingsley,Stephen D.Umans, TMH

36	Types and constructional details	7/1/2021	Lecture interspersed with discussions
37	principle of operation	11/1/2021	
38	emf equation	20/1/21	
39	operation on no load and on load	4/2/2021	
40	Lagging load	6/2/2021	
41	leading and unity power factors loads	13/2/21	
42	phasor diagrams of transformers	13/2/21	
43	equivalent circuit	15/21/21	
44	regulation	16/2/21	
45	losses and efficiency	17/2/21	
46	effect of variation of frequency and voltage on losses	18/2/21	
47	All day efficiency	19/2/21	
48	Problems	5/11/2020	
49	Problems	6/11/2020	

UNIT-V Testing of Transformers and 3-Phase Transformers
CO5 : Able to understand parallel transformers, control voltages with tap changing methods and achieve three-phase to two-phase transformation
TB:: Electrical Machines by P.S. Bhimbra, Khanna Publishers
TB:: Electric Machinery by A.E.Fitzgerald,Charles kingsley,Stephen D.Umans, TMH

50	Tests on single phase transformers	6/10/2020	Lecture interspersed with discussions
51	open circuit and short circuit tests	7/10/2020	
52	Sumpner's test	8/10/2020	
53	separation of losses	12/10/2020	
54	parallel operation with equal voltage ratios	12/10/2020	
55	auto transformer	13/10/20	
56	equivalent circuit	14/10/20	
57	comparison with two winding transformers	15/10/20	
58	Polyphase connections	16/10/20	
59	Y/Y, Y/Δ, Δ/Y, Δ/Δ and open Δ	21/10/20	

60	Third harmonics in phase voltages	22/10/20	
61	three winding transformers	23/10/20	
62	determination of Zp, Zs and Zt	19/1/21	
63	transients in switching	5/2/2021	

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TENTATIVE LESSON PLAN: R1921023
ELECTRONIC DEVICES & CIRCUITS

Course Title:ELECTRONIC DEVICES & CIRCUITS		
Section : EEE	Date : 27-02-2021	Page No : 1 of 3
Revision No : 00	Prepared By :D.RAVI TEJ	Approved By : HOD

Tools: Black board, Online

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,		
18	Full Wave Rectifier		
19	Bridge Rectifier		
20	Harmonic components		
21	Inductor Filter		Online
22	Capacitor Filter		
23	L-Section Filter, Multiple L-Section		
24	Π-Section Filter, Multiple Π 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		
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	**From: 02-10-2020**	Online
31	Characteristics of Transistor in C.C Configuration		
32	Punch through/reach through, Photo Transistor	**To: 12-10-2020**	
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 BAISING 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		Online
43	Collector to base bias		

44	Self bias	**From: 13-10-2020 To: 03-11-2020**	
45	Stabilizations against variations in Vbe, Ic 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: R1921024

Course Title: ELECTROMAGNETIC FIELDS (R1921024)		
Section :	Date: 17-08-2020	Page No: 1 of 3
Revision No:	Prepared by : Mrs.B.INDRAJA	Approved by :HOD

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I Electrostatics **CO1: Ability to calculate electric field and potentials using gauss's law or solving Laplace's or Poisson's equations** **TB: Engineering Electro magnetics – by William H. Hayt & John. A. Buck Mc.Graw-Hill Companies, 7th Editon.2009**			
1	Introduction	17.08.2020	Lecture interspersed with discussions
2	Scalar and vector fields overview of coordinate system	18.08.2020	
3	Calculus of vector & Scalar in Co-ordinate systems Coulomb's law	19.08.2020	
4	Electric field intensity Electro EFI due to a line charge and surface charge	20.08.2020	
5	Work done in moving point charge in ESF Electric potential	21.08.2020	
6	properties of potential function Potential gradient	24.08.2020	
7	Gauss's law	25.08.2020	
8	Laplace's and Poisson's equation	26.08.2020	
9,10	Tutorial	27,28.08.2020	
UNIT-II Conductors- Dielectrics & Capacitance **CO2: Learn how to calculate capacitance. Energy stored in dielectrics and get's the concept of conduction and convention currents** **TB: Engineering Electro magnetics – by William H. Hayt & John. A. Buck Mc.Graw-Hill Companies, 7th Editon.2009**			
11	Introduction	31.08.2020	Lecture interspersed with discussions
12	Electric dipole – dipole moment	01.09.2020	
13	potential and EFI due to an electric dipole	02.09.2020	
14	Torque on an Electric dipole in an electric field conductors and Insulators their behaviour in electric field	03.09.2020	
15	Polarization, boundary conditions between conductors to dielectric	04.09.2020	
16	Capacitance of parallel plates, spherical and coaxial cable	07.09.2020	
17	energy stored and energy density in a static electric field	08.09.2020	
18	equation of continuity	09.09.2020	
19,20	Tutorial	10,11.09.2020	

UNIT-III Magneto statics and Ampere's law **CO3: Ability to find magnetic field intensity due to current. The application of ampere's law and the Maxwell's second and third equations** **TB: Engineering Electro magnetics – by William H. Hayt & John. A. Buck Mc.Graw-Hill Companies, 7th Editon.2009**			
21	Introduction	14.09.2020	Lecture interspersed with discussions
22	Biot-Savart's law, Magnetic Field Intensity (MFI)	15.09.2020	
23	MFI due to a straight current carrying filament, MFI due to circular	16.09.2020	
24	square and solenoid current – carrying wire	17.09.2020	
25	relation between magnetic flux, magnetic flux density and MFI	18.09.2020	
26	Maxwell's second Equation, div(B)=0	21.09.2020	
27	Ampere's circuital law and its applications	22.09.2020	
28	MFI due to an infinite sheet of current and a long filament carrying conductor,	23.09.2020	
29	point form of Ampere's circuital law	24.09.2020	
30	field due to a rectangular loops Maxwell's third equation, Curl (H)=J.	25.09.2020	
Force in Magnetic fields **CO3: Students can calculate the magnetic forces and torque produced by currents in magnetic field.** **TB: Engineering Electro magnetics – by William H. Hayt & John. A. Buck Mc.Graw-Hill Companies, 7th Editon.2009**			
31	Magnetic force, moving charges in a magnetic field	05.10.2020	Lecture interspersed with discussions
32	Lorentz force equation	06.10.2020	
33	force on a current element in a magnetic field	07.10.2020	
34	force on a straight and a long current carrying conductor in a magnetic field	08.10.2020	
35	force between two straight long and parallel current carrying conductors	09.10.2020	
36	magnetic dipole and dipole moment	12.10.2020	
37	A differential current loop as a magnetic dipole	13.10.2020	
38	Torque on a current loop placed in a magnetic field	14.10.2020	
39	Numerical problems	15.10.2020	
40	Tutorial	16.10.2020	
UNIT-IV Self and Mutual Inductance **CO4: Will the able to calculate self and mutual inductances and the energy stored in the magnetic field.** **TB: Engineering Electro magnetics – by William H. Hayt & John. A. Buck Mc.Graw-Hill Companies, 7th Editon.2009**			
41	Self and mutual inductance	19.10.2020	Lecture interspersed with discussions
42	determination of self-inductance of a solenoid and toroid	20.10.2020	
43	mutual inductance between a straight long wire and a square loop wire in the same plane	21.10.2020	
44	energy stored and density in a magnetic field	22.10.2020	
45	Numerical problems	26.10.2020	
46,47,48,49	Tutorial	27,28,29,30.10.2020	

UNIT-V Time varying fields
CO5: Students will gain knowledge on time varying fields and get ability to calculate induced EMF. Concepts of displacement current and poynting vector and associated problems are solved.
TB: Engineering Electro magnetics – by William H. Hayt & John. A. Buck Mc.Graw-Hill Companies, 7th Editon.2009

50	Faraday's laws of electromagnetic induction	02.11.2020	Lecture interspersed with discussions
51	Integral and point forms	03.11.2020	
52	Maxwell's fourth equation, Curl (E)=-∂B/∂t	04.11.2020	
53	Statically and dynamically induced EMF.	05.11.2020	
54	Numerical problems	06.11.2020	
55,56,57,58, 59	Tutorial	09,10,11,12,13.11.2020	

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TENTATIVE PLAN: R1921025

Course Title: THERMAL AND HYDRO PRIME MOVERS		Course code: R1921025	
Section : Sec I	Date : 17/08/2020	Page No : 01 to 03	
Revision No : 00	Prepared By : B.NAGENDRA	Approved By : HOD	
Tools: BLACK BOARD, GOOGLE MEET			

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I	**THERMAL POWER PLANT**		
CO1: Become familiar with a basic concept of THERMAL POWER PLANT			
TB1: "THERMAL POWER PLANT",R.K.RAJPUT.			
	ONLINE CLASSES		
	UNIT – 1 INTRODUCTION TO THERMAL POWER PLANT		ONLINE
1	Introduction to thermal plant	FROM 17/08/2020 TO 15/09/2020	
2	Rankine cycle and its types		
3	Reheat Rankine cycle		
4	Efficiencies derivation		
5	Velocities triangles and combine velocities		
6	Problems on turbines and turbines		
7	Psychrometric chart		
8	Problems on impulse turbine Efficiencies		
9	Reaction turbine and its co-relations		
10	Velocity triangles of reaction turbine		
11	Problems on reaction turbine		
12	Revision of thermal power plant		
UNIT-II	**IC ENGINES**		
CO2: Gain knowledge about IC ENGINES			
TB2:" IC ENGINES", V.GANESHAN.			
	UNIT – 2 IC ENGINES		ONLINE
13	Introduction to principles of I.C engines, Classifications of I.C engines	FROM 16/09/2020 TO 01/10/2020	
14	Types of IC engines		
15	External combustion engines		
16	Otto cycle and its working		
17	Diesel cycle and its working		
18	Working of IC engine		
19	Four stroke and two stroke engines		
20	Two stroke engines		
21	Problems on IC ENGINES and pollutants		
22	Brake power and indicated power		
23	Problems on BP & IP		
24	BP & IP Efficiencies problems		
25	Brake thermal Efficiencies		
26	Indicated thermal Efficiencies		
28	Problems on mechanical and indicated Efficiencies		
29	Revision		
UNIT-III	**GAS TURBINES**		
CO3: Become familiar with the concepts of GAS TURBINES			
TB2:" GAS TURBINES", V.GANESHAN.			
	UNIT – 3 GAS TURBINES	FROM 02/10/2020 TO 12/10/2020	
30	Gas turbines and its introduction		
31	Working principle of gas turbines		
32	Derivation of finding co-efficient		

33	Derivation of finding Efficiencies	FROM 02/10/2020 TO 12/10/2020	ONLINE
34	Jets and its propulsions		
35	Mach numbers of gas turbines		
36	Problems on co-efficient gas turbines		
37	Problems on co-efficient gas turbines		
38	Problems on Efficiencies of gas turbines		
39	Problems on Efficiencies of gas turbines		
40	Revision		
UNIT-IV IMPACTS OF JETS ON VANES **CO3: Become familiar with the concepts of IMPACTS OF JETS ON VANES** **TB3:" IMPACTS OF JETS ON VANES", Dr.R.K.BANSAL**			
41	Introduction to impact of jet on vanes	FROM 13/10/2020 TO 03/11/2020	ONLINE
42	Pressure correlations on vanes		
43	Co-efficient of discharge		
44	Pressure losses of water flow		
45	Advantages and disadvantages of vanes impact		
46	Single stage centrifugal pump		
47	Multistage centrifugal pump		
48	Problems on co-efficient of discharge		
49	Problems on pressure losses due to flow		
50	Problems on pressure losses due to flow		
51	Problems on pressure losses due to flow		
UNIT-V HYDRAULIC TURBINES AND HYDRO POWER PLANT **CO3: Become familiar with the concepts of HYDRAULIC TURBINES AND HYDRO POWER PLANT** **TB3:" HYDRAULIC TURBINES AND HYDRO POWER PLANT", Dr.R.K.BANSAL**			
52	Introduction to hydro power plant production	FROM 04/11/2020 TO 12/11/2020	ONLINE
53	Types of hydraulic turbines		
54	Impulse turbine and its correlations		
55	Kaplan turbine and its correlations		
56	Francis turbine and its correlations		
57	Governing equations of Pelton and Kaplan		
58	Governing equations of Kaplan and Francis		
59	Hydraulic and mechanical Efficiencies		
60	Mechanical and volumetric Efficiencies		
61	Problems		

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TENTATIVE LESSON PLAN: R1921026
MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS

Course Title: MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS(R1921026)		
Section: EEE	**Date:**	**Page No:** 01 of 03
Revision No: 00	**Prepared By: SRINIVAS.V**	**Approved By: HOD**

Tools: Black board, 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	PPT
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	PPT
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	PPT
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	PPT
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	PPT
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	PPT
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	Lecture interspersed with discussions
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 T0 04/02/2021	Lecture interspersed with discussions
68.	Methods of Capital Budgeting: Pay Back Period (PBP),	05/02/2021 T0 08/02/2021	
69.	Calculation of Accounting Rate of Return (ARR)	09/02/2021 T0 10/02/2021	
70.	Calculation of Net Present Value (NPV)	11/02/2021 T0 12/02/2021	
71.	Calculation of Internal Rate of Return (IRR)	13/02/2021 T0 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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TENTATIVE LESSON PLAN: R1631021

Course Title: POWER SYSTEMS-II(R1631021)

Section :	**Date:17-08-2020**	**Page No: 1 of 3**
Revision No:	**Prepared by : N.E.K.CHANDRA**	**Approved by :HOD**

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I	**Transmission line Parameters**		
CO1 : Able to understand parameters of various types of transmission lines for using calculation and behavior during different operating conditions.			
TB:: V.K.Mehta, Rohit Mehta " principles of power systems ", 2007, S.Chand Publications			
TB:: PSR Murty " Electrical power systems ", 2011, BS Publications			
1	Types of conductors	1,2/9/20	Lecture interspersed with discussions
2	Calculation of resistance for solid conductors	3,4/9/20	
3	Calculation of inductance for single phase	5,6/9/20	
4	Calculation of inductance for three phase	7,8/9/20	
5	Single and double circuit lines	9,10/9/20	
6	Concept of GMR and GMD	11,14/9/20	
7	Symmetrical and asymmetrical conductor configuration with transposition	15,16/9/20	
8	Symmetrical and asymmetrical conductor configuration without transposition	17,18/9/20	
9	Calculation of capacitance for 2 wire	21,22/9/20	
10	Calculation of capacitance for 3 wire	23,24/9/20	
11	Effect of ground on capacitance	25/9/20	
12	Capacitance calculations for symmetrical single phase line	26/9/20	
13	Single and double circuit lines numerical problems	1/10/2020	
14	tutorial	1/10/2020	
UNIT-II	**Performance of Short and Medium Length Transmission Lines**		
CO2 : Able to understand the insight into specific transmission lines short and medium type which would have application in medium and high voltage power transmission systems.			
TB:: V.K.Mehta, Rohit Mehta " principles of power systems ", 2007, S.Chand Publications			
TB:: PSR Murty " Electrical power systems ", 2011, BS Publications			
15	Classification of Transmission Lines	17/8/20	Lecture interspersed with discussions
16	Short and medium line model representation	17/8/20	
17	Nominal T model, Nominal pie model	18/8/20	
18	Long line model representation	18/8/20	
19	Nominal T model	19/8/20	
20	Nominal pie model	19/8/20	
21	A, B, C, D Constants for symmetrical and asymmetrical models	20/8/20	
22	Numerical Problem	21/8/20	
23	Regulation and Efficiency Calculation	24/8/20	
24	tutorial	24/8/20	

UNIT-III Performance of Long Transmission Lines

CO3 : Able to understand various phenomenon related to charged line transmitting different level of power.

TB:: V.K.Mehta, Rohit Mehta " principles of power systems ", 2007, S.Chand Publications

TB:: PSR Murty " Electrical power systems ", 2011, BS Publications

TB:: M.L.Soni, P.V.Gupta,U.S. Bhatnagar A .Chakrabarthy "Power System Engineering" DhanpatRai& Co Pvt. Ltd.

TB:: C.L. Wadhwa " Electrical power systems ", 1998, New Age International (P) Limited, Publishers

25	Long Transmission Line	25/8/20	Lecture interspersed with discussions
26	Rigorous Solution	25/8/20	
27	Evaluation of A,B,C,D Constants	26/8/20	
28	Interpretation of the Long Line Equations	26/8/20	
29	Incident, Reflected and Refracted Waves		
30	Surge Impedance and SIL of Long Lines	27/8/20	
31	Wave Length&Velocity of Propagation	27/8/20	
32	Representation of Long Lines	28/8/20	
33	Equivalent-T and Pie network models	28/8/20	
34	Numericals	29/8/20	
35	tutorial	29/8/20	
36	Numericals	31/8/20	
37	Numericals	31/8/20	

UNIT-IV Power System Transients

CO4 : Able to understand the surge propagation, reflection and refraction in transmission lines. such output will be useful in protecting transmission line insulators and designing level of insulation coordination at various high voltages.

TB :: C.L. Wadhwa " Electrical power systems ", 1998, New Age International (P) Limited, Publishers

TB :: PSR Murty " Electrical power systems ", 2011, BS Publications

TB :: M.L.Soni, P.V.Gupta,U.S. Bhatnagar A .Chakrabarthy "Power System Engineering" DhanpatRai& Co Pvt. Ltd.

38	Types of System Transients	7/1/2021	Lecture interspersed with discussions
39	Travelling or Propagation of Surges	11/1/2021	
40	Attenuation–Distortion	20/1/21	
41	Reflection and Refraction Coefficients	4/2/2021	
42	Termination of lines with different types of conditions	6/2/2021	
43	Open Circuited Line–Short Circuited Line	13/2/21	
44	T-Junction	13/2/21	
45	Lumped Reactive Junctions	15/21/21	
46	Numerical Problems	16/2/21	
47	tutorial	17/2/21	
48	Numericals	18/2/21	
49	Numericals	19/2/21	

UNIT-V Various Factors Governing the Performance of Transmission line **CO5 : Able to utilize it for understanding the surge behaivour of transmission line for protection of connects equipments,viz.power transformer and system connected shunt reactors** **TB:: V.K.Mehta, Rohit Mehta " principles of power systems ", 2007, S.Chand Publications** **TB:: PSR Murty " Electrical power systems ", 2011, BS Publications**			
50	Skin and Proximity effects	6/10/2020	Lecture interspersed with discussions
51	Description and effect on Resistance of Solid Conductors	7/10/2020	
52	–Ferranti effect	8/10/2020	
53	Charging Current	12/10/2020	
54	Effect on Regulation of Transmission Line	12/10/2020	
55	Shunt Compensation	13/10/20	
56	Corona	14/10/20	
57	Description of the phenomenon	15/10/20	
58	Factors affecting corona	16/10/20	
59	Critical voltages and power loss	21/10/20	
60	Radio Interference	22/10/20	
61	Power factor improvement methods	23/10/20	
UNIT-VI Sag and Tension Calculations and Overhead Line Insulators **CO6 : Able to understand physical and geometrical parameters of transmission line for safe and efficient performance during operating condition of voltage and power.** **TB:: V.K.Mehta, Rohit Mehta " principles of power systems ", 2007, S.Chand Publications** **TB:: PSR Murty " Electrical power systems ", 2011, BS Publications**			
62	Sag and Tension calculations with equal and unequal Heights of Towers	26/10/20	Lecture interspersed with discussions
63	Effect of Wind and Ice on weight of Conductor	26/10/20	
64	Numerical Problems.	27/10/20	
65	Stringing chart and sag template and its applications–	27/10/20	
66	Types of Insulators	28/10/20	
67	String efficiency and Methods for improvement	29/10/20	
68	Numerical Problems	21/12/20	
69	Voltage distribution	23/12/20	
70	Calculation of string efficiency	24/12/20	
71	Capacitance grading	29/12/20	
72	Static Shielding.	30/12/20	

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TENTATIVE LESSON PLAN: R1631022

Course Title: RENEWABLE ENERGY SOURCES (R1631022)		
Section :	Date: 10-08-2020	Page No: 1 of 3
Revision No:	Prepared by : B.INDRAJA	Approved by :HOD

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I Fundamentals of Energy Systems **CO1 :Analyze solar radiation data, extraterrestrial radiation, radiation on earth's surface.** **TB: B.H.Khan " Non-Conventional Energy Resources ", 2009, McGraw Hill Publications** **TB: G.D.Rai " Renewable Energy Sources",2009, Khanna Publications**			
1	Introduction	17.08.2020	Lecture interspersed with discussions
2	Energy conservation principle	18.08.2020	
3	Energy scenario (world and India)	19.08.2020	
4	various forms of renewable energy	20.08.2020	
5	Solar radiation: Outside earth's atmosphere Earth surface	21.08.2020	
6	Analysis of solar radiation data	24.08.2020	
7,8	Geometry	25.26.08.2020	
9	Radiation on tilted surfaces	27.08.2020	
10	Numerical problems	28.08.2020	
11	Tutorial	29.08.2020	
UNIT-II Solar Thermal Systems **CO2 : Design solar thermal collections** **TB: B.H.Khan " Non-Conventional Energy Resources ", 2009, McGraw Hill Publications** **TB: G.D.Rai " Renewable Energy Sources",2009, Khanna Publications**			
12	Introduction	31.08.2020	Lecture interspersed with discussions
13	Liquid flat plate collections	01.09.2020	
14	Performance analysis	02.09.2020	
15	Transmissivity – Absorptivity product	03.09.2020	
16	Collector efficiency factor	04.09.2020	
17	Collector heat removal factor	05.09.2020	
18	Numerical problems	07.09.2020	
19	Introduction to solar air heaters	08.09.2020	
20	Concentrating collectors	09.09.2020	
21	solar pond solar still	10.09.2020	
22	solar thermal plant	11.09.2020	
23	Tutorial	12.09.2020	

UNIT-III Solar Photovoltaic Systems **CO3 : Design solar photo voltaic systems** **TB: B.H.Khan " Non-Conventional Energy Resources ", 2009, McGraw Hill Publications** **TB: G.D.Rai " Renewable Energy Sources",2009, Khanna Publications**			
24	Introduction	14.09.2020	Lecture interspersed with discussions
25	Solar photovoltaic cell , Module , Array	15.09.2020	
26	Construction Efficiency of solar cells Developing technologies Cell I-V characteristics	16.09.2020	
27	Equivalent circuit of solar cell Series resistance ,Shunt resistance	17.09.2020	
28	Applications and systems Balance of system components System design: storage sizing	18.09.2020	
29	PV system sizing	19.09.2020	
30	Maximum power point techniques	21.09.2020	
31	Perturb and observe (P & O) technique	22.09.2020	
32	Hill climbing technique	23.09.2020	
33,34,35	Tutorial	24,25,26.09.2020	
UNIT-IV Wind Energy **CO4 : Develop maximum power point techniques in solar PV and wind** **TB: B.H.Khan " Non-Conventional Energy Resources ", 2009, McGraw Hill Publications** **TB: G.D.Rai " Renewable Energy Sources",2009, Khanna Publications**			
36	Introduction	05.10.2020	Lecture interspersed with discussions
37	Sources of wind energy	06.10.2020	
38	Wind patterns	07.10.2020	
39	Types of turbines	08.10.2020	
40	Horizontal axis and Vertical axis machines	09.10.2020	
41	Kinetic energy of wind	10.10.2020	
42	Betz coefficient	12.10.2020	
43	Tip -Speed ratio Efficiency	13.10.2020	
44	Power output of wind turbine	14.10.2020	
45	Selection of generator(synchronous, induction) Maximum power point tracking.	15.10.2020	
46	Wind farms Power point for utility grids	16.10.2020	
47	Tutorial	17.10.2020	

UNIT-V Hydro and Tidal power systems
CO5 : Explain wind energy conversion systems, Betz coefficient, tip speed ratio
TB: B.H.Khan " Non-Conventional Energy Resources ", 2009, McGraw Hill Publications
TB: G.D.Rai " Renewable Energy Sources",2009, Khanna Publications

48	Basic working principle	19.10.2020	Lecture interspersed with discussions
49	Classification of hydro systems: Large, small ,micro	20.10.2020	
50	Measurement of head and flow	21.10.2020	
51	Energy equation	22.10.2020	
52	Types of turbines	23.10.2020	
53	Tidal power Turbine	26.10.2020	
54	Basics,Kinetic energy equation	27.10.2020	
55	Turbine for tidal power	28.10.2020	
56	Wave power	29.10.2020	
57	Basics ,Kinetic energy equation	30.10.2020	
58	Wave power devices , Linear generators	31.10.2020	
	Tutorial		

UNIT-VI Biomass, fuel cells and geothermal systems
CO6 : Explain basic principle and working of hydro, tidal, biomass, fuel cell and geothermal systems
TB: B.H.Khan " Non-Conventional Energy Resources ", 2009, McGraw Hill Publications
TB: G.D.Rai " Renewable Energy Sources",2009, Khanna Publications

59	Introduction to Biomass Energy	02.11.2020	Lecture interspersed with discussions
60	Fuel classification	03.11.2020	
61	Pyrolysis	04.11.2020	
	Direct combustion of heat		
	Different digesters and sizing		
62	Introduction to Fuel cell	05.11.2020	
63	Classification	06.11.2020	
	Fuel cell voltage		
	Efficiency		
64	VI characteristics	07.11.2020	
	Introduction to Geothermal : Classification		
65	Dry rock and acquifer	09.11.2020	
	Energy analysis		
	Geothermal based electric power generation		
66,67,68,69	Tutorial	10,11,12,13.11.2020	

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TENTATIVE LESSON PLAN: R1621023

Course Title: SIGNALS & SYSTEMS (R1621023)		
Section :	**Date: 17-08-2020**	**Page No: 1 of 3**
Revision No:	**Prepared by : Mr.K.SATYANARAYANA**	**Approved by :HOD**

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I Introduction **CO1: Characterize the signals and systems and principles of vector spaces, Concept of orthgonality** **TB: Signals & Systems- Narayan Iyer and K Satya Prasad, Cenage Pub.**			
1	Definition of Signals and Systems	17.08.20	Lecture interspersed with discussions
2	Classification of Signals	18.08.20	
3	Classification of Systems	19.08.20	
4	Operations on signals: time-shifting, time-scaling, amplitude-shifting, amplitude-scaling.	20.08.20	
5	Problems on classification and characteristics of Signals and Systems	21.08.20	
6	Complex exponential and sinusoidal signals	24.08.20	
7	Singularity functions and related functions: impulse function	25.08.20	
8	Singularity functions and related functions: step,ramp functions	26.08.20	
9	Analogy between vectors and signals	27.08.20	
10	orthogonal signal space	28.08.20	
11	Signal approximation using orthogonal functions	29.08.20	
12	Mean square error, closed or complete set of orthogonal functions	31.08.20	
13	Orthogonality in complex functions	01.09.20	
14	Problems	02.09.20	
15	Problems	03.09.20	
UNIT-II Fourier Series And Fourier Transform **CO2: Analyze the continuous-time signals and continuous-time systems using Fourier series, Fourier transform and Laplace transform** **TB: Signals & Systems- Narayan Iyer and K Satya Prasad, Cenage Pub.**			
16	Fourier series representation of continuous time periodic signals	04.09.20	Lecture interspersed with discussions
17	properties of Fourier series	05.09.20	
18	Dirichlet's conditions	07.08.20	
19	Complex Fourier spectrum	08.09.20	
20	Deriving Fourier transform from Fourier series	09.09.20	
21	Fourier transform of arbitrary signal	10.09.20	
22	Fourier transform of standard signals	11.09.20	
23	Fourier transform of periodic signals	14.09.20	
24	properties of Fourier transforms	15.09.20	
25	properties of Fourier transforms	16.09.20	
26	Problems	17.09.20	
27	function	18.09.20	

28	Problems	19.09.20	
29	Introduction to Hilbert Transform	21.09.20	
30	Problems	22.09.20	
UNIT-III Sampling Theorem **CO3: Apply sampling theorem to convert continuous-time signals to discrete-time signal and reconstruct back** **TB: Signals & Systems- Narayan Iyer and K Satya Prasad, Cenage Pub.**			
31	Graphical and analytical proof for Band Limited Signals	23.09.20	Lecture interspersed with discussions
32	impulse sampling, Natural and Flat top Sampling	24.09.20	
33	impulse sampling, Natural and Flat top Sampling	26.09.20	
34	Reconstruction of signal from its samples	26.09.20	
35	Reconstruction of signal from its samples	28.09.20	
36	effect of under sampling	28.09.20	
37	Aliasing, Introduction to Band Pass sampling	28.09.20	
38	Aliasing, Introduction to Band Pass sampling	29.09.20	
39	Tutorial	30.09.20	
40	Tutorial	30.09.20	
UNIT-IV Analysis of Linear Systems **CO4: Understand the relationships among the various representations of LTI systems** **TB: Signals & Systems- Narayan Iyer and K Satya Prasad, Cenage Pub.**			
41	Linear system, impulse response	01.10.20	Lecture interspersed with discussions
42	Response of a linear system, Linear time invariant (LTI)	05.10.20	
43	Concept of convolution in time domain and frequency domain	06.10.20	
44	Graphical representation of convolution, Transfer function of	06.10.20	
45	Filter characteristics of linear systems	07.10.20	
46	Distortion less transmission through a system, Signal	08.10.20	
47	Ideal LPF, HPF and BPF characteristics	09.10.20	
48	relationship between bandwidth and rise time	09.10.20	
49	properties of correlation function	13.10.20	
50	spectrum	14.10.20	
51	spectral density function	15.10.20	
52	Relation between convolution and correlation	15.10.20	
53	correlation, Extraction of signal from noise by filtering.	16.10.20	
UNIT-V Laplace Transforms **CO5: Understand the Concepts of convolution, correlation, Energy and Power density spectrum and their relationships** **TB: Signals & Systems- Narayan Iyer and K Satya Prasad, Cenage Pub.**			
54	Review of Laplace transforms	19.10.20	Lecture interspersed with discussions
55	Partial fraction expansion, Inverse Laplace transform	19.10.20	
56	Concept of region of convergence (ROC) for Laplace	20.10.20	
57	constraints on ROC for various classes of signals	20.10.20	
58	Properties of L.T's	21.10.20	
59	Properties of L.T's	22.10.20	
60	Relation between L.T's, and F.T. of a signal	23.10.20	
61	synthesis	26.10.20	
62	Problems	27.10.20	

63	Problems	29.10.20	
64	Problems	29.10.20	
65	Problems	28.12.20	
UNIT-VI Z–Transforms **CO6: Apply z-transform to analyze discrete-time signals and systems** **TB: Signals & Systems- Narayan Iyer and K Satya Prasad, Cenage Pub.**			
66	Fundamental difference between continuous-time and	28.12.20	Lecture interspersed with discussions
67	discrete time signal representation using complex exponential and sinusoidal components	29.12.20	
68	Periodicity of discrete time using complex exponential signal	29.12.20	
69	Concept of Z- Transform of a discrete sequence	30.12.20	
70	Distinction between Laplace, Fourier and Z transforms	30.12.20	
71	Region of convergence in Z-Transform	02.01.21	
72	constraints on ROC for various classes of signals	02.01.21	
73	Inverse Z-transform, properties of Z-transforms	04.01.21	
74	Problems	05.01.21	
75	Problems	06.01.21	
76	Problems	06.01.21	
77	Problems	07.01.21	
78	Problems	08.01.21	
79	Problems	11.01.21	
80	Problems	03.02.21	
81	Revision	08.02.21	
82	Revision	10.02.21	
83	Revision	11.02.21	
84	Revision	17.02.21	
85	Revision	17.02.21	
86	Revision	20.02.21	

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ACTUAL LESSON PLAN: R1631024
PULSE AND DIGITAL CIRCUITS

Course Title: PULSE & DIGITAL CIRCUITS		
Section : Sec I	**Date : 17/08/2020**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : S.NAGESWARA RAO**	**Approved By : HOD**

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I LINEAR WAVW SHAPING **CO1:** ABLE TO DESIGN LINEAR WAVE SHAPING CIRCUITS LIKE HIGH PASS AND LOW PASS RC CIRCUITS FOR DIFFERENT INPUTS **T TB:" PULSE & DIGITAL CIRCUITS", A.ANAND KUMAR"**			
1	Introduction	17-08-20	Lecture interspersed with discussions
2	High Pass RC Circuit	18-08-20	
3	Low Pass RC Circuit	19-08-20	
4	Response of HPF to Sine, Step, Ramp	20-08-20	
5	Response of HPF to Pulse, Square Signals	21-08-20	
6	Response of LPF to Sine , Step, Ramp	22-08-20	
7	Response of LPF to Pulse , Square	24-08-20	
8	RC Network as Integrator & Differentiator	25-08-20	
9	Attenuators	26-08-20	
10	Attenuators applications in CRO probe	27-08-20	
11	RL & RLC Circuit Response to Step	28-08-20	
12	Ringing Circuits	29-08-20	
UNIT-II NON LINEAR WAVW SHAPING **CO2:** ABLE TO DESIGN NON-LINEAR WAVE SHAPING CIRCUITS LIKE CLIPPERS AND CLAMPERS WITH NON-LINEAR DEVICES **TB:" PULSE & DIGITAL CIRCUITS", A.ANAND KUMAR"**			
13	Non Linear wave shaping	31-08-20	Lecture interspersed with discussions
14	Diode & Transistor Clippers	01-09-20	
15	Clipping at Two Levels , Transfer Characteristics of Clippers	02-09-20	
16	Transfer Characteristics of Clampers	03-09-20	
17	Emitter Clippers, Comparators	04-09-20	
18	Clamper with Diode	05-09-20	
19	Clamping Theorem	07-09-20	
20	Effect of Diode	08-09-20	
21	Practical Clamping Circuits	09-09-20	
22	Effect of diode Characteristics on Clamping voltage	10-09-20	
23	Transfer characteristics of clampers	11-09-20	

UNIT-III SWITCHING CHARECTERISTICS OF DEVICES

CO3: ABLE TO UNDERSTAND THE SWITCHING CHARACTERISTICS OF NON-LINEAR DEVICES

TB:" PULSE & DIGITAL CIRCUITS", A.ANAND KUMAR"

24	Diode as Switch	12-09-20	Lecture interspersed with discussions
25	Linear Characteristics of Diode	14-09-20	
26	Transistor as Switch	15-09-20	
27	Break Down Voltage Consideration	16-09-20	
28	Saturation Parameters	17-09-20	
29	Variation of Parameters With Temperature	18-09-20	
30	Transistor Switching Times	19-09-20	
31	Analysis & Design of Fixed Bias	21-09-20	
32	Self Bias Bi-Stable Multivibrator	22-09-20	
33	Collector Catching Circuits	23-09-20	
34	Commutating Capacitors	24-09-20	
35	Methods Of Triggering	25-09-20	
36	Schmitt Trigger	26-09-20	

UNIT-IV MULTIVIBRATORS

CO4: DESIGN OF MULTI VIBRATORS FOR GENERATING NON-SINUSOIDAL SIGNALS

TB:" PULSE & DIGITAL CIRCUITS", A.ANAND KUMAR"

37	Monostable Multi Vibrator	05-10-20	Lecture interspersed with discussions
38	Collector coupled monostable Multivibrator	06-10-20	
39	Problems	07-10-20	
40	Emitter coupled monostable Multivibrator	08-10-20	
41	Problems	09-10-20	
42	Problems	10-10-20	
43	Collector Coupled Atable Multi Vibrator	12-10-20	
44	Voltage to Time Converter	13-10-20	
45	Astable Multivibrator	14-10-20	
46	Voltage to Frequency Converter	15-10-20	

UNIT-V VOLTAGE TIME BASE GENERATOR

CO5: DESIGN TIME BASED CIRCUITS TO GENERATE THE TIME BASED SIGNALS

TB:" PULSE & DIGITAL CIRCUITS", A.ANAND KUMAR"

47	Features Of Time Base Generator	16-10-20	Lecture interspersed with discussions
48	Methods Of Generation	17-10-20	
49	Exponential Sweep Circuits	28-10-20	
50	Negative Resistance Sweep Circuits	19-10-20	
51	Basic principles in Miller time base generators	20-10-20	
52	Basic principles in Bootstrap time base generators	21-10-20	
53	Transistor miller time base Generator	22-10-20	
54	Transistor Bootstrap time base Generator	26-10-20	

UNIT-VI LOGIC FAMILIES AND SAMPLING GATES			
CO6: UNDERSTAND THE PRINCIPLES OF LOGIC FAMILIES AND SAMPLING GATES			
TB:" PULSE & DIGITAL CIRCUITS", A.ANAND KUMAR"			
55	Diode Logic	27-10-20	Lecture interspersed with discussions
56	Transistor Logic	28-10-20	
57	Diode - Transistor Logic	30-10-20	
58	Transistor - Transistor Logic	31-10-20	
59	Emitter Coupled Logic	02-11-20	
60	AOI Logic	03-11-20	
61	Comparison of logic families	04-11-20	
62	Basic operating principles of Sampling Gates	05-11-20	
63	Diode Uni-Directional Sampling Gates	06-11-20	
64	Bi-Directional Sampling Gates	07-11-20	
65	Four diode gates	09-11-20	
66	Six diode gates	10-11-20	
67	Reduction of Pedestal In Gate Circuits	11-11-20	
68	Applications of Sampling Gates	12-11-20	

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TENTATIVE LESSON PLAN: R1631025

Course Title:POWER ELECTRONICS		
Section :	Date: 17.08.2020	Page No: 1 of 3
Revision No:	Prepared by : T.Maha lakshmi	Approved by :HOD

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I Power Semiconductor Devices **CO1 : students are able to Explain the characteristics of various power semiconductor devices and analyze the static and dynamic characteristics of SCR's** **TB:: Power Electronics: Circuits, Devices and Applications – by M. H.Rashid, Prentice Hall of India, 2nd edition, 1998**			
1	Thyristors	17.8.2020	Lecture interspersed with discussions
2	Silicon controlled rectifiers (SCR's)	18.8.2020	
3	Characteristics of power MOSFET and power IGBT	19.8.2020	
4	Basic theory of operation of SCR	20.8.2020	
5	Static characteristics	21.8.2020	
6	Turn on and turn off methods	24.8.2020	
7	Dynamic characteristics of SCR	25.8.2020	
8	Snubber circuit design	26.8.2020	
9	Basic requirements of gating circuits for SCR	27.8.2020	
10	Basic requirements of gating circuits for IGBT	28.8.2020	
11	Basic requirements of gating circuits for MOSFET.	31.8.2020	
UNIT-II AC-DC Single-Phase Converters **CO2 : Students are able to Design firing circuits for SCR and Explain the operation of single phase full–wave converters and analyze harmonics in the input current.** **TB:: Power Electronics: Circuits, Devices and Applications – by M. H.Rashid, Prentice Hall of India, 2nd edition, 1998**			
12, 13	1-phase half wave controlled rectifiers -R load	1.9.2020, 2.9.2020	Lecture interspersed with discussions
14	1-phase half wave controlled rectifiers - RL load with Freewheeling diode	3.9.2020	
15	1-phase half wave controlled rectifiers - RL load without freewheeling diode	4.9.2020	
16	1-phase full wave controlled rectifiers – center tapped configuration - R load	5.9.2020	
17	1-phase full wave controlled rectifiers – center tapped configuration - Rl load	7.9.2020	
18	1-phase full wave controlled rectifiers – bridge configuration- R load	8.9.2020	
19	1-phase full wave controlled rectifiers – bridge configuration- RL load with freewheeling diode	9.9.2020	

20	1-phase full wave controlled rectifiers – bridge configuration- RL load without freewheeling diode continuous conduction	10.9.2020	
21, 22	Effect of source inductance in 1-phase fully controlled bridge rectifier with continuous conduction.	11.9.2020, 12.9.2020	
UNIT-III AC-DC3-Phase Converters **CO3 :Students are able to Explain the operation of three phase full–wave converters.** **TB:: Power Electronics: Circuits, Devices and Applications – by M. H.Rashid, Prentice Hall of India, 2nd edition, 1998**			
23, 24, 25	3-phase half wave uncontrolled rectifier	14.9.2020, 15.9.2020, 16.9.2020	Lecture interspersed with discussions
26, 27, 28	3-phase Full wave uncontrolled rectifier	17.9.2020, 18.9.2020, 19.9.2020	
29, 30	3-phase half wave controlled rectifier with R and RL load	21.9.2020, 22.9.2020	
31, 32	3-phase fully controlled rectifier with R and RL load	23.9.2020, 24.9.2020	
33, 34	3-phase semi controlled rectifier with R and RL load.	25.9.2020, 26.9.2020	
UNIT-IV DC–DC Converters **CO4 : Students are able to Analyze the operation of different types of DC-DC converters** **TB :: Power Electronics: Circuits, Devices and Applications – by M. H.Rashid, Prentice Hall of India, 2nd edition, 1998**			
35, 36	Analysis of Buck boost converters in Continuous Conduction Mode (CCM) and Discontinuous Conduction	5.10.2020, 6.10.2020	Lecture interspersed with discussions
37, 38	Analysis of boost and buck converters in Continuous Conduction Mode (CCM) and Discontinuous Conduction Modes (DCM)	7.10.2020, 8.10.2020	
39, 40	Analysis of buck-boost converters in Continuous Conduction Mode (CCM) and Discontinuous Conduction Modes (DCM)	9.10.2020, 12.10.2020	
41, 42	Output voltage equations using volt-sec balance in CCM & DCM output voltage ripple & inductor current	13.10.2020, 14.10.2020	
43	ripple for CCM only	15.10.2020	
44	Principle operation of forward and fly back converters in CCM.	16.10.2020	
UNIT-V DC–AC Converters **CO5 : Students are able to Explain the operation of inverters and application of PWM techniques for voltage control and harmonic mitigation** **TB :: Power Electronics: Circuits, Devices and Applications – by M. H.Rashid, Prentice Hall of India, 2nd**			
45, 46	1- phase half bridge with R and RL loads	17.10.2020, 19.10.2020	Lecture interspersed
47	1- phase full bridge inverters with R and RL loads	20.10.2020	
48	3-phase square wave inverters – 1200 conduction and 1800 conduction modes of operation	21.10.2020	
49	PWM inverters	22.10.2020	

50	Quasi-square wave pulse width modulation	23.10.2020	interspersed with discussions
51	Sinusoidal pulse width modulation	24.10.2020	
52	Prevention of shoot through fault in Voltage Source Inverter (VSI)	27.10.2020	
53	Current Source Inverter (CSI)	28.10.2020	
54	Introduction to Auto Sequential Commutated Current Source Inverter (ASCCSI) .	29.10.2020	
UNIT-VI AC – AC Regulators. **CO5 :Students are able to Analyze the operation of AC-AC regulators** **TB :: Power Electronics: Circuits, Devices and Applications – by M. H.Rashid, Prentice Hall of India, 2nd edition, 1998**			
55	Static V-I characteristics of TRIAC	30.10.2020	Lecture interspersed with discussions
56	modes of operation of TRIAC	2.11.2020	
57, 58	1-phase AC-AC regulator phase angle control with R and RL load	3.11.2020, 4.11.2020	
59, 60	integrated cycle control with R and RL load	5.11.2020	
61, 62	For continuous and discontinuous conduction	6.11.2020, 7.11.2020	
63, 64	3-Phase AC-AC regulators with R load only	9.11.2020, 10.11.2020	
65, 66	Transformer tap changing using antiparallel Thyristors.	12.11.2020, 13.11.2020	

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