TENTATIVE LESSON PLAN:R1621021

Course Title:ELECTRICAL CIRCUITS ANALYSIS-II(R1621021)		
Section :	Date: 10-6-2019	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 Balanced Three phase circuits **CO1 :Students are able to solve three- phase circuits under balanced condition.** **TB:: CIRCUIT THEORY (ANALYSIS AND SYNTHESIS) BY A.CHAKRABARTHI, DHANPATI RAI & CO., ENGINEERING CIRCUIT ANALYSIS, W.H. HAYT, J.E. KEMMERLY, S.M.**			
1	Phase sequence	10-6-2019, 11-6-2019, 12-6-2019	Lecture interspersed with discussions
2	star and delta connection	13-6-2019, 14-6-2019, 17-6-2019	
3	relation between line and phase voltages and currents	18-6-2019, 19-6-2019, 20-6-2019	
4	analysis of balanced three phase circuits	21-6-2019, 24-6-2019, 25-6-2019	
5	measurement of active and reactive power	26-6-2019, 27-6-2019	
UNIT-II Unbalanced Three phase circuits **CO2 :Students are able to solve three- phase circuits under unbalanced condition.** **TB:: CIRCUIT THEORY (ANALYSIS AND SYNTHESIS) BY A.CHAKRABARTHI, DHANPATI RAI & CO., ENGINEERING CIRCUIT ANALYSIS, W.H. HAYT, J.E. KEMMERLY, S.M.**			
6	Analysis of three phase unbalanced circuits	1-7-2019, 2-7-2019, 3-7-2019	Lecture interspersed with discussions
7	Loop method	4-7-2019, 5-7-2019, 8-7-2019	
8	Star-Delta transformation technique,	9-7-2019, 10-7-2019, 11-7-2019	
9	Two wattmeter methods for measurement of three phase power.	12-7-2019, 15-7-2019, 16-7-2019	
UNIT-III Transient Analysis in DC and AC circuits **CO3 : Students are able find out transient response of electrical networks with different types of excitations.** **TB:: CIRCUIT THEORY, S.SALIVAHANAN, S. PRAVIN KUMAR, VIKAS PUBLISHING HOUSE PVT LTD. , NETWORK THEORY, N.SREENIVASULU, HI-TECH PUBLISHERS.**			

10	Transient response of R-L circuit for DC excitations, Solution using differential equations and Laplace	17-7-2019, 18-7-2019	Lecture interspersed with discussions
11	Transient response of R-C circuit for DC excitations, Solution using differential equations and Laplace transforms.	19-7-2019, 22-7-2019, 23-7-2019	
12	Transient response of R-L-C circuit for DC excitations, Solution using differential equations and Laplace transforms.	24-7-2019, 25-7-2019	
13	Transient response of R-L circuit for AC excitations, Solution using differential equations and Laplace transforms.	26-7-2019, 29-7-2019	
14	Transient response of R-C circuit for AC excitations, Solution using differential equations and Laplace transforms.	30-7-2019, 31-7-2019	
15	Transient response of R-L-C circuit for AC excitations, Solution using differential equations and Laplace transforms.	1-8-2019, 2-8-2019	

UNIT-IV Two Port Networks

CO4 : 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.

16	Two port network parameters	13-8-2019, 14-8-2019	Lecture interspersed with discussions
17	Z parameters	16-8-2019, 19-8-2019	
18	Y parameters	20-8-2019, 21-8-2019	
19	ABCD parameters	22-08-2019	
20	Hybrid parameters	26-08-2019	
21	Parameter's relations	27-08-2019	
22	Cascaded networks	28-08-2019	
23	Poles and zeros of network functions.	29-08-2019	

UNIT-V Network synthesis

CO5 : Students are able to represent electrical equivalent network for a given network transfer function.

TB :: NETWORK ANALYSIS AND SYNTHESIS, RAVISH R SINGH, MC GRAW HILL EDUCATION.

24	Positive real function	30-8-2019, 3-9-2019	Lecture interspersed with discussions
25	basic synthesis procedure	04-09-2019	
26	LC immittance functions	05-09-2019	
27	RC impedance functions and	6-9-2019, 9-9-2019	
28	RL admittance functions	11-09-2019	
29	RL impedance function and	12-09-2019	

30	RC admittance function	13-09-2019	Lecture interspersed with
31	Foster and Cauer methods	16-9-2019, 17-9-2019	
UNIT-VI Fourier analysis and Transforms **CO6 :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.**			
32	Trigonometric form of Fourier series	18-09-2019	Lecture interspersed with discussions
33	and exponential form of Fourier series	19-09-2019	
34	Conditions of symmetry	20-9-2019, 23-9-2019	
35	line spectra	24-9-019, 25-9-2019	
36	phase angle spectra	26-09-2019	
37	Analysis of electrical circuits to non sinusoidal periodic waveforms	27-09-2019	
38	Fourier integrals and Fourier transforms	30-09-2019	
39	properties of Fourier transforms	01-10-2019	
40	physical significance of the Fourier Transform	03-10-2019	
41	its application to electrical circuits	04-10-2019	

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TENTATIVE LESSON PLAN: R1621022

Course Title: Electrical Machines -I		
Section :	Date: 10-06-2019	Page No: 1 of 3
Revision No:	Prepared by : S.Nageswara Rao	Approved by :HOD

Tools : Black board, PPTs

No.of periods	Topics	Date	Mode of Delivery
UNIT-I Electromechanical Energy Conversion and Introduction to DC machine **CO1 : Able to assimilate the concepts of electromechanical energy conversion** **TB:: Electrical Machines-I – U.A. Bakshi M.V. Bakshi** **TB:: Electrical Machines – P.S. Bhimbra, Khanna Publishers**			
1	**Electromechanical Energy Conversion and introduction to DC machines**	6/10/2019	Lecture interspersed with discussions
2	Principles of electromechanical energy conversion	6/11/2019	
3	singly excited system	6/12/2019	
4	multi excited system	6/13/2019	
5	Calculation of force and torque using the concept of co-energy	6/15/2019	
6	Problems	6/17/2019	
7	Construction of DC machine	6/18/2019	
8	principle of operation of DC machine	6/19/2019	
9	EMF equation for generator	6/20/2019	
10	Classification of DC machines based on excitation	6/22/2019	
11	OCC of DC shunt generator.	6/24/2019	
UNIT-II Performance of DC Machines **CO2 :Able to mitigate the ill-effects of armature reaction and improve commutation in dc machines..** **TB::Electrical Machines-I – U.A. Bakshi M.V. Bakshi**			
17	Introduction to DC motors	6/25/2019	Lecture interspersed with discussions
18	Torque and back-emf equations of dc motors	6/26/2019	
19	Armature reaction	6/27/2019	
20	commutation	6/29/2019	
21	characteristics of separately-excited motors	7/1/2019	
22	shunt, series and compound motors	7/1/2019	
23	losses and efficiency-	7/3/2019	
24	applications of dc motors.	7/4/2019	
25	Problems	7/6/2019	
26	Problems	7/8/2019	
UNIT-III Starting, speed control and testing Of D.C machines **CO3 :Able to understand the torque production mechanism and control the speed of dc motors.** **TB ::** **Electrical Machines-I – U.A. Bakshi M.V. Bakshi**			
31	Necessity of starter	7/9/2019	Lecture interspersed with discussions
32	Starting by 3 point starter	7/10/2019	
33	Starting 4 point starter	7/11/2019	

34	Problems	7/15/2019	Lecture interspersed with discussions
35	Speed control by armature and field control method	7/16/2019	
36	Speed control by voltage control method	7/17/2019	
37	testing of DC machines	7/18/2019	
38	brake test	7/23/2019	
39	Swinburne's method	7/24/2019	
40	principle of regenerative or Hopkinson's method	7/25/2019	
41	retardation test	7/27/2019	
42	Problems	7/27/2019	
	Problems	7/29/2019	
	seperation of losses.	7/29/2019	
43	Problems	7/30/2019	
UNIT-IV Single phase transformers **CO4 :Able to analyze the performance of single phase transformers** **TB :: Electrical machines by V.K. Mehta & Rohit Mehta, S.Chand publications**			
44	Types and constructional details	9/12/2019	Lecture interspersed with discussions
45	principle of operation	9/13/2019	
46	emf equation	8/14/2019	
47	operation on no load and on load	8/17/2019	
48	Lagging load	8/19/2019	
49	leading and unity power factors loads	8/20/2019	
50	phasor diagrams of transformers	8/21/2019	
51	equivalent circuit	8/22/2019	
52	regulation	8/24/2019	
53	losses and efficiency	8/26/2019	
54	effect of variation of frequency and voltage on losses	8/27/2019	
55	All day efficiency	8/28/2019	
56	Problems	9/3/2019	
57	Problems	9/4/2019	
UNIT-V Single phase transformers testing **CO5: Able to predetermine regulation, losses and efficiency of single phase transformers** **TB ::Electrical machines by V.K. Mehta & Rohit Mehta, S.Chand publications**			
60	Tests on single phase transformers	9/5/2019	Lecture interspersed with discussions
61	open circuit and short circuit tests	9/7/2019	
62	Sumpner's test	9/9/2019	
63	separation of losses	9/12/2019	
64	parallel operation with equal voltage ratios	9/16/2019	
65	auto transformer	9/17/2019	
66	equivalent circuit	9/18/2019	
67	comparison with two winding transformers	9/19/2019	
UNIT-VI 3- phase transformers **CO6:Able to parallel transformers, control voltages with tap changing methods and achieve three-phase to two-phase transformation** **TB ::** **Electrical machines by V.K. Mehta & Rohit Mehta, S.Chand publications**			
69	Polyphase connections	9/25/2019	Lecture interspersed with discussions
70	Y/Y, Y/Δ, Δ/Y, Δ/Δ and open Δ	9/26/2019	
71	Third harmonics in phase voltages	9/27/2019	
72	three winding transformers	9/27/2019	

73	determination of Zp, Zs and Zt	9/28/2019	Lecture interspersed with discussions
74	transients in switching	9/28/2019	
75	off load and on load tap changers	9/30/2019	
76	Scott connection	10/1/2019	

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TENTATIVE LESSON PLAN: R1621023

Course Title: Basic Electronics and Devices (R1621023)		
Section : Sec A	Date : 12/06/2019	Page No : 01 of 03
Revision No : 00	Prepared By : B.S.S.Tejesh	Approved By : HOD

Tools: Black Board

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-I REVIEW OF SEMI CONDUCTOR PHYSICS **CO1:Identify properties of semiconductor material** **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, Second Edition.**			
1	Introduction to Semiconductor Physics	11-18/6/19	Lecture Interspersed With discussions
2	Insulators, Semi conductors and metals		
3	Mobility and conductivity	8/8/19	
4	Electronics and holes in intrinsic semiconductors	21/6/19	
5	Extrinsic semiconductors	20/6/19,7/8/19	
6	Drift	21/6/19	
7	Diffusion	27/6/19	
8	charge densities in semiconductors	7/8/19	
9	Hall effect	24-27/6/19	
10	Continuity equation		
11	Fermi level in intrinsic semiconductors	28/6/19, 1/7/19, 8/8/19	
12	Fermi level in extrinsic semiconductors		
13	**Tutorial**		
UNIT-II JUNCTION DIODE CHARACTERISTICS **CO2: analyze the performance and characteristics of diodes** **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, Second Edition**			
14	Operation and characteristics of p-n junction diode	2-4/7/19	Lecture interspersed with discussions
15	Current components in p-n diode, diode equation	5,18/7/19	
16	Temperature dependence on V–I characteristic,	8/7/19	
17	energy band diagram of p-n diode.	11/7/19	
18	Avalanche and Zener break down	11/7/19	
19	Zener characteristics,	12/7/19	
20	tunnel diode	18/719	
21	characteristics with the help of energy band diagrams	15/7/19,	
22	diffusion capacitance	9/7/19	
23	diode resistance	14/8/19	
24	Varactor diode,LED	9/8/19	
25	PIN diode	9/7/19	

26	Photo diode	14/8/19	
27	Tutorial		
No. of Periods	**TOPIC**	**Date**	**Mode of Delivery**
UNIT-III RECTIFIERS AND REGULATORS **CO3: Ability to understand different rectifiers and regulators** **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, Second Edition**			
28	Basic Rectifier setup	197/19	Lecture interspersed with discussions
29	Half wave Rectifier,	21/7/19	
30	Full Wave Rectifier	23/7/19	
31	Bridge Rectifier	16/8/19	
32	Harmonic components	25/7/19	
33	Inductor Filter	28/7/19	
34	Capacitor Filter	29/7/19	
35	L-Section Filter, Multiple L-Section, Π-Section Filter, Multiple Π Section Filter	16/8/19	
36	Simple circuit of a regulator using Zener diode,Types of regulators-series and shunt voltage regulators, over load voltage protection.	2/8/19	
37	**Tutorial**	30-31/7/19	
UNIT-IV TRANSISTORS **CO4: Able to understand different configurations of transistors and biasing techniques** **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, Second Edition.**			
38	Junction transistor	28/8/19	Lecture interspersed with discussions
39	transistor as an amplifier	30/8/19	
40	Characteristics of transistor CE	3/9/19	
41	Characteristics of transistor CB		
42	Characteristics of transistor CC		
43	Transistor biasing	28/8/19	
44	Compensation against variation in base emitter voltage		
45	Thermal runaway	5/9/19	
46	Hybrid model of transistor	5/9/19	
47	thermal stabilization	6/9/19	
48	transistor current components	3/9/19	
49	Configurations		
50	Analysis of transistor amplifier using h-parameters	6/9/19	
51	Compensation against variation collector current	28/8/19	
52	transistor as switch	30/8/19	

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT-V POWER SEMICONDUCTOR DEVICES **CO5: Able to understand can understand how FET's, thyristors, IGBT works** **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, Second Edition**			
53	Principle of operation	9-9-19	Lecture interspersed with discussions
54	Silicon control rectifiers, power IGBT and power MOSFET their ratings	9/9/19	
55	Comparison of power devices		
56	JFET Characteristics	11/9/19	
57	low frequency model of FET	16/9/19	
58	FET as an amplifier	16/9/19	
59	MOFET Characteristics–static and Transfer	11-13/9/19	
60	Characteristics of thyristors	9/9/19	
61	IGBT		
UNIT-VI AMPLIFIERS AND OSCILLATORS **CO6: Analysis and understand the operation of positive and negative feedback.** **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, Second Edition**			
62	Feedback Amplifiers -classification	25/9/19	Lecture interspersed with discussions
63	feedback concept, transfer gain	18/9/19	
64	general characteristics of negative feedback amplifiers	26/9/19	
65	effect of feedback on input and output resistances		
66	Methods of analysis of feedback amplifiers	25/9/19	
67	Classification power amplifiers, push-pull amplifiers	26/9/19	
68	Introduction to harmonics (distortion factor	27/9/19	
69	Condition for oscillation, RC-phase shift oscillator	23/9/19	
70	Wein bridge oscillator, Crystal oscillator	21/9/19	
71	Frequency and amplitude stability of oscillators.	24/9/19	

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Date: 6/11/19

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Date: 6/11/19

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TENTATIVE LESSON PLAN: R1621024

Course Title: ELECTROMAGNETIC FIELDS (R1621024)		
Section :	Date: 10-06-2019	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 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	10.06.19	Lecture interspersed with discussions
2	Introduction Vector Algebra	11.06.19	
3	Introduction to Co-ordinate systems	12.06.19	
4	Introduction Calculus	13.06.19	
5	Introduction Calculus	14.06.19	
6	Electrostatic fields, coulomb's law, EFI	15.06.19	
7	EFI due to a line charge	17.06.19	
8	EFI due to a surface charge	17.06.19	
9	Work done in moving point charge ESF	18.06.19	
10	problems	19.06.19	
11	problems	20.06.19	
12	Tutorial	24.06.19	
13	Tutorial	24.06.19	
14	Electric potential, properties of potential function	25.06.19	
15	Potential gradient, Gauss's law, Maxwell's first law div(D) = ρ_v	26.06.19	
16	Laplace's and Poisson's equations and solution	27.06.19	
17	Tutorial	27.06.19	
18	Tutorial	28.06.19	
19	problems	29.06.19	
20	problems	01.07.19	
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**			
21	Electric dipole, dipole moment	01.07.19	Lecture interspersed
22	Potential and EFI due to Electric Dipole	02.07.19	
23	Torque on an electric dipole in an electric field	03.07.19	
24	insulators	04.07.19	
25	Polarization , boundary conditions in electrostatics	05.07.19	
26	Boundary conditions between dielectric to dielectric	06.07.19	
27	Capacitance – capacitance of parallel plates	06.07.19	

28	Capacitance of spherical and coaxial cables	08.07.19	with discussions
29	Energy stored and energy density static electric field	09.07.19	
30	conduction and convection current densities	10.07.19	
31	Ohm's law in point form-equation of continuity	10.07.19	
32	Tutorial	11.07.19	
33	problems	12.07.19	
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**			
34	Static magnetic fields –Biotsavart's law	15.07.19	Lecture interspersed with discussions
35	Oesterd's experiment-Magnetic field intensity	16.07.19	
36	MFI Due to a straight current carrying filament	17.07.19	
37	MFI due to circular,square&solenoid current-carrying wire	17.07.19	
38	Relation between magnetic flux &MFI Maxwell's Second Equation div B=0	18.07.19	
39	Ampere's circuit law &its applications	18.07.19	
40	MFI Due to an infinite sheet of current and a long filament carrying conductor	19.07.19	
41	Point form of Ampere's circuital law	20.07.19	
42	Field due to a circular loop	20.07.19	
43	Rectangular and square loops	22.07.19	
44	Maxwell's third equation, curl(H)=J	23.07.19	
45	Tutorial	25.07.19	
46	problems	27.07.19	
UNIT-IV Force in Magnetic fields **CO4: 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**			
47	Magnetic force	29.07.19	Lecture interspersed with discussions
48	Moving charges in a magnetic field	30.07.19	
49	Lorentz force equation	30.07.19	
50	Force on current element in a magnetic field	31.07.19	
51	magnetic field	01.08.19	
52	Force between two current carrying conductors	02.08.19	
53	Magnetic dipole &dipole moment	02.08.19	
54	A Differential current loop as a magnetic dipole	03.08.19	
55	Torque on a current loop placed in a magnetic field	05.08.19	
56	Tutorial	07.08.19	
57	Tutorial	07.08.19	
58	Tutorial	08.08.19	

UNIT-V Self and Mutual Inductance **CO5: 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**			
59	Self and Mutual Inductance	08.08.19	Lecture interspersed with discussions
60	Determination of self inductance of solenoid, toroid	09.08.19	
61	loop wire in same plane	13.08.19	
62	Energy stored &density in magnetic field	14.08.19	
63	Tutorial	17.08.19	
64	problems	17.08.19	
65	problems	17.08.19	
66	problems	28.08.19	
UNIT-VI Time varying fields **CO6: 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**			
67	Time varying fields	30.08.19	Lecture interspersed with discussions
68	Faraday's law of electromagnetic induction	31.08.19	
69	Its integral &point forms	04.09.19	
70	Maxwell's Fourth equation	04.09.19	
71	Statistically &dynamically induced EMF's	05.09.19	
72	Simple problems	07.09.19	
73	Modification of Maxwell's equation for time varuing fields	07.09.19	
74	Displacement current poynting theorem	11.09.19	
75	Pointing vector	12.09.19	
76	Tutorial	12.09.19	
77	Tutorial	13.09.19	
78	Tutorial	18.09.19	
79	Tutorial	19.09.19	
80	problems	21.09.19	
81	Time varying fields	23.09.19	
82	Faraday's law of electromagnetic induction	24.09.19	
83	Its integral &point forms	25.09.19	
84	Maxwell's Fourth equation	26.09.19	
85	Statistically &dynamically induced EMF's	27.09.19	
86	Simple problems	28.09.19	

K. Satyanarayana.
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S. Sri Gow
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TENTATIVE PLAN: R1621025

Course Title: Thermal and Hydro Prime Movers (R1621025)		
Date :1/7/2019		Page No : 01 of 04
Revision No : 00	Prepared By : U TANOJ	Approved By : HOD

Tools : Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I **I.C Engines** **CO1: Able to learn about the constructional features, operational details of various types of internal combustion engines.** **TB : V Ganesan, Internal Combustion Engines, 3rd edition, 1994.**			
1.	Introduction to principles of I.C engines	1,2/7/19	Lecture interspersed with discussions
2.	Classifications of I.C engines	3/7/19	
3.	Introduction to S.I Units	4/7/19	
4.	Working principle of petrol engine(2-stroke & 4-stroke)	5/7/19	
5.	Working principle of petrol engine(4-stroke)	6/7/19	
6.	Working principle of diesel engine(2-stroke)	6/7/19	
7.	Working principle of diesel engine(2-stroke & 4-stroke)	7/7/19	
8.	Difference between 2-stroke and 4-stroke engines	8,9/7/19	
9.	Working principle of valve timing diagram	10/7/19	
10.	Working principle of port timing diagram	11/7/19	
11.	Working principle of otto cycle and diesel	1,2/7/19	
12.	**Tutorial**	12/7/19	

TENTATIVE PLAN: R1621025

Course Title: Thermal and Hydro Prime Movers (R1621025)		
Date :		Page No : 02 of 04
Revision No : 00	Prepared By : U TANOJ	Approved By : HOD

Tools : Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –II **Thermal Power Plant and steam turbines** **CO2: Students can perform the correlate between the air standard cycles and the actual cycles that govern the steam turbines.** **TB : R.K.Rajput, Thermal Engineering, 3rd edition, 2002.**			
13	Introduction to Properties of Steam and use of Steam Tables- T-S and H-S Diagrams	12,13/7/19	Lecture interspersed with discussions
14	Introduction to Properties of Steam and use of Steam Tables- T-S and H-S Diagrams	13/7/19	

16.	Analysis of Various Thermodynamic Processes under gone by Steam	14/7/19	
17.	Working principle of rankine cycle	15/7/19,	
18.	Working principle of Carnot cycle	15/7/19	
19.	Analysis of simple Rankine and Re-heat cycles.	16/7/19,17/7/19	
20.	Schematic layout of steam power plant & Classification of Steam Turbines- Impulse Turbine and Reaction Turbine	17/7/19,18/7/19	
21.	Compounding in Turbines	19/7/19	
22.	Velocity Diagrams for simple Impulse and Reaction Turbines	20/7/19	
23.	Problems on impulse & reaction turbines	21/7/19	
24	**Tutorial**	23/7/2019	

UNIT –III Gas Turbines

CO3: Able to impart the knowledge of gas turbine fundamentals, the governing cycles and the method to improve the efficiency of gas turbines.

TB: R.K.Rajput, Thermal Engineering, 3rd edition, 2002.

25.	Working principle of Simple gas turbine plant-ideal cycle	23/7/19, 24/7/19, 25/7/19	Lecture interspersed with discussions
26.	Working principle of closed cycle	25/7/19, 26/7/19, 27/7/19	
27.	Working principle of open cycle	27/7/19, 29/7/19, 30/7/19	
28.	Work ratio and optimum pressure ratio for simple gas turbine cycle and Actual cycle analysis	31/7/19, 1/8/19, 2/8/19	
29	Analysis of simple cycles with inter cooling, reheating and Regeneration	3/8/19, 5/8/19, 8/8/19	
30	Problems on ideal gas turbines & actual gas turbines	8/8/19, 9/8/19, 11/8/19, 16/8/19,17/8/19	

TENTATIVE PLAN: R1621025

Course Title: Thermal and Hydro Prime Movers (R1621025)			
Date :		**Page No :** 03 of 04	
Revision No : 00	**Prepared By : U TANOJ**	**Approved By : HOD**	

Tools : Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT - IV	**Impacts Of Jets And Pumps**		
CO4 : Student able to understand the knowledge of various types of pumps, their constructional features, working and performance			
TB : R. K.Bansal, Fluid Mechanics, 3rd edition, 2005			
31.	Impulse momentum equation	28/8/19	Lecture interspersed with discussions
32.	Impact of Jet on stationary vanes (flat)	30/8/19,	
33.	Impact of Jet on stationary vanes (curved)	31/8/19	
34.	Impact of Jet on moving vanes (flat)	3/9/19	
35.	Impact of Jet on moving vanes (curved)	6/9/17	
36.	Problems on stationary vanes(flat and curved)	7/9/17	
37	Problems on moving vanes(flat and moving)	4/9/19, 5/9/19	

38	Types of pumps and Centrifugal pumps Main components, Working principle	6/9/19	
39	Multi stage pumps Main components, Working principle	6/9/19	
40	Performance and characteristic curves	7/9/19,	
41	Problems on pumps	8,9/9/19	
42,43	**Tutorial**	9,10/9/19	

UNIT – V Hydraulic Turbines

CO5 : Student shall be able to calculate the performance of hydraulic turbines.

TB : R. K.Bansal, Fluid Mechanics, 3rd edition, 2005.

44.	Classification of turbines	10/9/19	Lecture interspersed with discussions
45.	Working principles of different hydraulic	10/9/19	
46.	Efficiency calculation and Design principles for Pelton Wheel	11/9/19	
47,48	Efficiency calculation and Design principles for Francis turbine	13/9/19,14/9/19	
49,50	Efficiency calculation and Design principles for Kaplan turbine	18/9/19 ,20/9/19	
51,52	Governing of turbines & Performance charateristics	21/9/19,23/9/19	
53,54.	**Tutorial**	23,24/9/19	

TENTATIVE PLAN: R1621025

Course Title: Thermal and Hydro Prime Movers (R1621025)			
Date :		**Page No :** 04 of 04	
Revision No : 00	**Prepared By : U TANOJ**	**Approved By : HOD**	

Tools : Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT - VI Hydro power			
CO6 : Student learn about the constructional features, operational details of various types of hydraulic turbines.			
TB : R. K.Bansal, Fluid Mechanics, 3rd edition, 2005.			
55	Components of Hydro electric power plant	24/9/19	Lecture interspersed with discussions
56.	Pumped storage systems	25/9/19	
57.	The hit or miss transformation	25/9/19	
58.	Estimation of water power potential	25/9/17	
59,60.	Estimation of load on turbines load curve, load, capacity, utilization, diversity factors	26/9/19,27/9/19	
61,62	Duration curve, firm power, secondary power, prediction of load.	27/9/19,28/9/19	
63,64.	**Tutorial**	28,29/9/19	

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TENTATIVE LESSON PLAN: R1621026
MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS

Course Title: MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS(RT21034)		
Section : EEE	**Date :**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : M. INDRAJA**	**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	17-06-2019	Lecture interspersed with discussions
2.	Nature and Scope of Managerial Economics	19-06-2019	
3.	Managerial Economics related to Other Areas	20-06-2019	
4.	Basic Economic Tools in ME	22-06-2019	
5.	Introduction to Demand – Meaning & Definition, Features of Demand	26-06-2019	
6.	Determinants of Demand	27-06-2018	
7.	Law of Demand & Its exceptions, Demand Function	03-07-2019	
8.	Introduction to Elasticity of Demand	04-07-2019	
9.	**Tutorial**	05-07-2019	
UNIT –II	**PRODUCTION, PRODUCTION FUNCTION&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.			
10.	Introduction to Production : Meaning & Definition, Production Function	05-07-2019	Lecture interspersed with discussions
11.	Factors of production, production function with one variable factor	08-07-2019	
12.	Law of Variable Proportions	08-07-2019	
13.	Factors of production, production function with two variable factors	10-07-2019	
14.	Concept of Isocosts, Isoquants	10-07-2019	
15.	MRTS, Least Cost Combination	10-07-2019	

[illegible]	[illegible]	[illegible]	[illegible] Delivery
16.	Cobb-Douglas Production Function	11-07-2019	Lecture interspersed with discussions
17.	Economies of Scale& diseconomies of scale	11-07-2019	
18.	Returns to Scale & returns to factors	12-07-2019	
19.	Concept of cost & Various Cost Concepts	15-07-2019	
20.	Introduction to Break Even Analysis	18-07-2019	
21.	Determination of Break Even Point with Graph	19-07-2019	
22.	Calculation of Break Even Point (BEP) algebraic method	20-07-2019	
23.	**Tutorial**	20-07-2019	
UNIT - III	**MARKETS AND COMPETITION , PRICING POLICIES**		
CO3: Gain knowledge about market, types of markets, competition, price determination under different market conditions, And various pricing methods.			
TB: A.R.Arya sri, "Managerial Economics & Financial Analysis", 2005, TMH.			
24.	Introduction to Markets: Meaning & Definition, Features	22-07-2019	Lecture interspersed with discussions
25.	Types of markets, market structure	23-07-2019	
26.	Price Determination under perfect competition	24-07-2019	
27.	Equilibrium point of firm and industry	25-07-2019	
28.	Price Determination under Monopoly	26-07-2019	
29.	Equilibrium point of firm and industry in monopoly	27-07-2019	
30.	Price Determination under Monopolistic Competition	28-07-2019	
31.	Price Determination under Oligopoly	29-07-2019	
32.	Managerial Theories of the Firm	07-08-2019	
33.	Marries and Williamson theory of firm	14-08-2019	
34.	Pricing, pricing objectives.	16-08-2019	
35.	Various Methods of Pricing	16-08-2019	
UNIT – IV	**FORMS OF BUSINESS ORGANIZATIONS AND BUSINESS CYCLE**		
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			
36.	Introduction to Business: Definition, Features	28-08-2019	Lecture interspersed with discussions
37.	Sole Proprietorship : Features, Merits, Demerits	04-09-2019	
38.	Partnership : Features, Merits, Demerits,kinds of partners	06-09-2019	
39.	Joint Stock Company : Features, Merits, Demerits	06-09-2019	
40.	Public limited and private limited companies, features	09-09-2016	
41.	Public Enterprises : Features, Merits, Demerits	09-09-2019	
42.	Phases of Business Cycles	28-08-2019	

UNIT – V 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

No. of Periods	TOPIC	DATE	Mode of Delivery
43.	Introduction to Accounting : Meaning & Definition, Classification of Accounts	11-09-2019	Lecture interspersed with discussions
44.	Accounting Process	11-09-2019	
45.	Principles of accounting(GAAP)	12-09-2019	
46.	Accounting cycle	12-09-2019	
47.	Preparation of Journal : Problems	13-09-2019	
48.	Preparation of Ledger : Problems	13-09-2019	
49.	Preparation of Trail Balance : Problems	14-09-2019	
50.	Final Accounts (Trading ,profit & loss A/C, Balance Sheet)	14-09-2019	
51.	Final Accounts with Adjustments	16-09-2019	
52.	Treatment of adjustments in preparation of final accounts.	18-09-2019	

UNIT – VI 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
53	Introduction to Capital Budgeting: Meaning, Definition, Need.	23-09-2019	Lecture interspersed with discussions
54.	Methods of Capital Budgeting: Pay Back Period (PBP),	24-09-2019	
55	Calculation of Accounting Rate of Return (ARR)	25-09-2019	
56.	Calculation of Net Present Value (NPV)	26-09-2019	
57.	Calculation of Internal Rate of Return (IRR)	27-09-2019	
58.	Calculation of Profitability Index	28-09-2019	
59.	Merits and Demerits of Capital Budgeting Techniques.	30-09-2019	

M. Indraja.

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S. Sri Gouri

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TENTATIVE LESSON PLAN: R1641021

Course Title: UTILIZATION OF ELECTRICAL ENERGY		
Branch: EEE	**Date : 08-06-2019**	**Page No :** 01 of 02
Revision No : 00	**Prepared By : B. NavaJeevan Reddy**	**Approved By : HOD**

Tools: Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT–I: Selection of Motors **CO-1:**Able to identify a suitable motor for electric drives and industrial applications **TB1:**Utilization of electrical energy by JB Gupta, Katson publications			
1	Choice of motor	**10-06-2019 To 29-06-2019**	Lecture interspersed with discussions
2	Type of electric drives		
3	Starting and running characteristics		
4	Speed control		
5	Temperature rise		
6	Applications of electric drives		
7	Types of industrial loads (continuous, Intermittent and variable loads)		
8	Load equalization		
UNIT–II: Electric Heating & Electric Welding **CO-2:**Able to identify most appropriate heating or welding techniques for suitable applications. **TB1:**Utilization of electrical energy by JB Gupta, Katson publications			
9	Advantages and methods of electric heating	**01-07-2019 To 17-07-2019**	Lecture interspersed with discussions
10	Resistance heating		
11	Induction heating		
12	Dielectric heating		
13	Electric welding		
14	Resistance and arc welding		
15	Electric welding equipment		
16	Comparison between AC and DC Welding		
UNIT–III: Illumination fundamentals **CO-3:**Able to understand various level of illuminosity produced by different illuminating sources. **TB1:**Utilization of electrical energy by JB Gupta, Katson publications			
17	Introduction & Terms used in illumination	**18-07-2019 To 03-08-2019**	Lecture interspersed with discussions
18	Laws of illumination		
19	Polar curves		
20	Integrating sphere		
21	Lux meter		
22	Sources of light		
UNIT–IV: Various Illumination Methods **CO-4:**Able to estimate the illumination levels produced by various sources and recommend the most efficient illuminating sources and should be able to design different lighting systems by taking inputs and constraints in view. **TB1:**Utilization of electrical energy by JB Gupta, Katson publications			
23	Discharge lamps	**12-08-2019 To 28-08-2019**	Lecture interspersed with discussions
24	MV and SV lamps		
25	Comparison between tungsten filament lamps and fluorescent tubes		
26	Basic principles of light control		
27	Types and design of lighting and flood lighting		
28	LED lighting		

UNIT–V: Electric Traction – I **CO-5:**Able to determine the speed/time characteristics of different types of traction motors. **TB1:**Utilization of electrical energy by JB Gupta, Katson publications			
29	System of electric traction and track electrification	**29-08-2019 To 17-09-2019**	Lecture interspersed with discussions
30	Review of existing electric traction systems in India		
31	Special features of traction motor		
32	Mechanics of train movement		
33	Speed–time curves for different services		
34	Trapezoidal and quadrilateral speed time curves		
UNIT – VI: Electric Traction – II **CO-6:**Able to estimate energy consumption levels at various modes of operation. **TB1:**Utilization of electrical energy by JB Gupta, Katson publications			
35	Calculations of tractive effort	**18-09-2019 To 05-10-2019**	Lecture interspersed with discussions
36	Power & Specific energy consumption for given run		
37	Effect of varying acceleration and braking retardation		
38	Adhesive weight and braking retardation		
39	Adhesive weight and coefficient of adhesion		
40	Principles of energy efficient motors		

Text Books:

1. Utilization of electrical energy by JB Gupta, Katson publications
2. Generation and Utilization of electrical energy by CL Wadhwa, New age publications

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Tentative Lesson Plan:R1641022

Course Title: LINEAR IC APPLICATIONS (R1641022)		
Section: IV EEE	**Date : 10-06-2019**	**Page No :** 01 of 03
Revision No : 00	**Prepared By : B. RAVI**	**Approved By : HOD**

Tools : Black board, 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	DIBO Differential Amplifier- DC and AC analysis	21,22-6-19	Lecture interspersed with discussions
2	DIUBO Differential Amplifier- DC and AC analysis	25-6-19	
3	SIBO Differential Amplifier- DC and AC analysis	25-6-19	
4	SIUBO Differential Amplifier- DC and AC analysis	27-6-19	
5	DC Coupling and Cascade Differential Amplifier	28-6-19	
6	Level translator	29-6-19	
7	Current Mirror	28-6-19	
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.**			
8	Integrated circuits-Types-Classification,	2-7-19	Lecture interspersed with discussions
9	Op-amp Block Diagram	2-7-19	
10	ideal Op-amp Specifications	6-7-19	
11	practical Op-amp Specifications		
12	DC and AC characteristics	9-7-19	
13	741 op-amp & its features	10-7-19	
14	Op-Amp parameters & Measurement-Input & Out put Off set voltages	11-7-19	
15	Op-Amp parameters & Measurement - currents	11-7-19	
16	Op-Amp parameters & Measurement -slew rate CMRR	12-7-19	
17	Op-Amp parameters & Measurement -PSRR	16-7-19	
18	Frequency Compensation techniques	17-7-19	
19	Problems	17-7-19	
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.**			
20	Inverting and Noninverting amplifier	18,19,20-719	Lecture interspersed with discussions
21	Scale changer, summer , average amplifier	23,24-7-19	
22	Integrator , differentiator	25-7-19	
23	Comparators,	26-7-19	
24	AC amplifier, Buffers	27-7-19	
25	Log Amplifier	27-7-19	
26	Anti log amplifier	30-7-19	
27	V to I, I to V converters, Instrumentation amplifier	31-7-19	

28	Astable Multivibrators	14-8-19	Lecture interspersed with discussions
29	Monostable Multivibrators	16-8-19	
30	Triangular wave generator	20-8-19	
31	Square wave generator	21-8-19	
32	Precision diode	24-8-19	
33	Half wave rectifier	30-8-19	
34	Full wave rectifier	31-8-19	
UNIT - IV **CO 4: Ability to use OP Amp as filters** **T2: Linear Integrated Circuits, D. Roy Choudary, Sahil B jain, New Age International.**			
35	Design & Analysis of 1st order BW active filter-LPF	4-9-19	Lecture interspersed with discussions
36	Design & Analysis of 2nd order BW active filter-LPF	6-9-19	
37	Design & Analysis of 1st order BW active filter-HPF	11-9-19	
38	Design & Analysis of 2nd order BW active filter-HPF	11-9-19	
39	Design & Analysis of Band pass Filter	16-9-19	
40	Design & Analysis of Band reject Filter	17-9-19	
41	All pass filters, IC 1496	17-9-19	
42	Four Quadrant Multiplier, Sample & Hold circuits	18-9-19	
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.**			
43	Introduction to 555 timer-functional diagram	19-9-19	Lecture interspersed with discussions
44	Monostable operations and applications	20-9-19	
45	Astable operations and applications	21-9-19	
46	PLL - introduction, block schematic, principles and description of individual blocks	21-9-19	
47	VCO (566)	21-9-19	
48	565 PLL	24-9-19	
49	Applications of PLL – frequency multiplication, frequency translation, AM, FM & FSK demodulators	25-9-19	
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.**			
50	weighted resistor DAC	26-9-19	Lecture interspersed with discussions
51	R-2R ladder DAC, inverted R-2R DAC	27-9-19	
52	IC 1408 DAC	28-9-19	
53	parallel Comparator type ADC, counter type ADC,SAC	28-9-19	
54	dual slope ADC, DAC and ADC Specifications	28-9-19	

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Date: 10/6/19

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TENTATIVE LESSON PLAN: R1641023

Course Title: POWER SYSTEMS OPERATION AND CONTROL		
Section :	**Date: 10-6-2019**	**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 – 1: Economic Operation of Power Systems **CO1 : Able to compute optimal scheduling of Generators.** **TB:: Power System Operation and Control, G.R. Chandra sekar Reddy, A. Srinivasula Reddy, Overseas PublishersPVT L.T.D**			
1	Optimal operation of Generators in Thermal power stations	10-6-2019, 12-6-2019	Lecture interspersed with discussions
2	Heat rate curve	13-06-2019	
3	Cost Curve	14-06-2019	
4	Incremental fuel and Production costs	15-6-2019, 17-6-2019	
5	Input–output characteristics	19-06-2019	
6	Optimum generation allocation with line losses neglected	20-6-2019, 21-6-2019	
7	Optimum generation allocation including the effect of transmission line losses	22-6-2019, 24-6-2019	
8	Loss Coefficients	26-6-2019, 27-6-2019	
Unit – 2: Hydrothermal Scheduling **CO2 :Able to understand hydrothermal scheduling** **TB:: Power System Operation and Control, S.Siva Naga Raju, G.Sreenivasan, Pearson.** **TB:: Modern Power System Analysis – by I.J.Nagrath & D.P.Kothari, Tata Mc Graw – Hill Publishing Company Ltd, 2nd edition.** **Tata Mc Graw – Hill Publishing Company Ltd, 2nd edition.**			
9	Optimal scheduling of Hydrothermal System.	28-6-2019, 29-6-219, 1/7/2019	Lecture interspersed with discussions
10	Hydroelectric power plant models	3-7-2019, 4-7-2019, 5-7-2019	
11	Scheduling problems	6-7-2019, 8-7-2019, 10-7-2019	
12	Short term hydrothermal scheduling problem	11-7-2019, 12-7-2019, 13-7-2019	
Unit – 3: Unit Commitment **CO3 :Understand the unit commitment problem.** **TB::Power System Operation and Control, S.Siva Naga Raju, G.Sreenivasan, Pearson.**			

16	Optimal unit commitment problem	17-7-2019, 18-7-2019	Lecture interspersed with discussions
17	Need for unit commitment	19-7-2019, 20-7-2019	
18	Constraints in unit commitment	22-7-2019, 24-7-2019	
19	Cost function formulation	25-7-2019, 26-7-2019	
20	Solution methods	27-7-2019, 29-7-2019	
21	Priority ordering	31-7-2019, 1-8-2019	
22	Dynamic programming	2-8-2019, 3-8-2019	
Unit – 4: Load Frequency Control-I **CO4 : Able to understand importance of the frequency.** **TB :: Power System Operation and Control, S.Siva Naga Raju, G.Sreenivasan, Pearson.**			
23	Modeling of steam turbine	14-08-2019	Lecture interspersed with discussions
24	Generator	14-08-2019	
25	Mathematical modeling of speed governing system	16-08-2019	
26	Transfer function	17-08-2019	
27	Modeling of Hydro turbine	17-08-2019	
28	Necessity of keeping frequency constant	19-08-2019	
29	Definitions of Control area	21-08-2019	
30	Single area control system	22-08-2019	
31	Block diagram representation of an isolated power system	22-08-2019	
32	Steady state analysis	24-08-2019	
33	Dynamic response	26-08-2019	
34	Uncontrolled case.	28-08-2019	
35	Proportional plus Integral control of single area and its block diagram representation	28-82019	
36	Steady state response.	29-08-2019	
Unit – 5: Load Frequency Control-II **CO5 :Understand importance of PID controllers in single area and two area systems** **TB :: Power System Operation and Control, S.Siva Naga Raju, G.Sreenivasan, Pearson.**			
37	Block diagram development of Load Frequency Control of two area system	30-8-2019, 31-8-2019	Lecture interspersed with discussions
38	uncontrolled case	4-9-2019, 5-9-2019, 6-9-2019	
39	controlled case.	7-9-2019, 9-9-2019	
40	Tie-line bias control.	11-9-2019, 12-9-2019, 13-9-2019	
41	Load Frequency Control and Economic dispatch control	14-9-2019, 16-9-2019	

Unit - 6 : Reactive Power Control
CO6 :Will understand reactive power control and line power compensation.
TB :: Power System Operation and Control, S.Siva Naga Raju, G.Sreenivasan, Pearson

42	Overview of Reactive Power control	18-09-2019	Lecture interspersed with discussions
43	Reactive Power compensation in transmission systems	19-9-2019, 20-9-2019	
44	Advantages and disadvantages of different types of compensating equipment for transmission systems	21-9-2019, 23-9-2019	
45	Load compensation	25-9-2019, 26-9-2019	
46	Specifications of load compensator	27-9-2019, 28-9-2019	
47	Uncompensated and compensated transmission lines: Shunt and series compensation	30-9-2019, 3-10-2019	
48	Need for FACTS controllers.	4-10-2019, 5-10-2019	

Mahalakshmi 5/10/19
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TENTATIVE LESSON PLAN: R1641024

Course Title: SWITCH GEAR AND PROTECTION(R1641024)		
Section :	Date : 10/06/19	Page No : 01 of 03
Revision No :	Prepared By : B.INDRAJA	Approved By : HOD

Tools : Black board, PPTs, Moodle

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –I	**CIRCUIT BREAKER-I**		
CO1: Student can understand the fundamentals of circuit breaking, arc phenomenon and factors affecting the arc interruption process, Auto reclosing of circuit breakers the construction of various types of circuit breakers are explained with their relative merits and demerits			
TB :: SWITCH GEAR AND PROTECTION BY J B GUPTA,KATSON PUBLISHERS			
1	Miniature circuit breaker	**11/06/19**	Lecture interspersed with discussions
2	Elementary principles of arc interruption	**12/06/19**	
3	Restrike voltage	**13/06/19**	
4	Recovery voltage	**14/06/19**	
5	Restrike phenomenon	**15/06/19**	
6	Average and Max. RRRV	**18/06/19**	
7	Current chopping	**19/06/19**	
8	Resistance switching	**20/06/19**	
9	Introduction to oil circuit breakers	**21/06/19**	
10	Description and operation of Air Blast	**22/06/19**	
11	Vacuum circuit breakers	**25/06/19**	
12	SF6 circuit breakers	**26/06/19**	
13	CB ratings and specifications	**27/06/19**	
14	Auto reclosing	**28/06/19**	
15	Tutorial	**29/06/19**	
UNIT - II	**ELECTROMAGNETIC PROTECTION**		
CO2: Student can focus on over current protection and distance protection of transmission line, fundamentals of protective relaying, construction of protective relays.			
TB : SWITCH GEAR AND PROTECTION BY J B GUPTA,KATSON PUBLISHERS			
16	Principle of operation	**02/07/19**	Lecture interspersed with discussions
17	Construction of attracted armature	**03/07/19**	
	Balanced beam	**03/07/19**	
18	Induction disc and induction cup relays	**04/07/19**	
19	Relays classification	**05/07/19**	
20	Instantaneous- DMT	**06/07/19**	
21	IDMT types	**09/07/19**	
22	Applications of Relays	**10/07/19**	
23	Over current/under voltage relays		
	Directional relays	**11/07/19**	
24	Differential relays	**12/07/19**	
25	Percentage differential relays	**16/07/19**	
26	Universal torque equation	**17/07/19**	
27	Distance relays- impedance, Reactance, mho	**18/07/19**	
28	Offset mho relay	**19/07/19**	
29	Characteristics of distance relays	**20/07/19**	
	Comparison	**20/07/19**	
30	Tutorial	**23/07/19**	

TENTATIVE LESSON PLAN: R1641024

Course Title: SWITCH GEAR AND PROTECTION(R1641024)		
Section :	Date : 10/06/19	Page No : 02 of 03
Revision No :	Prepared By : B.INDRAJA	Approved By : HOD

Tools : Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –III Generator protection			
CO3: Student can understand protection of generator for different faults such as abnormal faults, earth fault, interturn fault etc and transformer protection for internal and external faults			
TB :: SWITCH GEAR AND PROTECTION BY J B GUPTA,KATSON PUBLISHERS			
31	Protection of generators against stator faults	**24/07/19**	Lecture interspersed with discussions
	Rotor faults	**24/07/19**	
32	Abnormal conditions	**25/07/19**	
33	Restricted earth fault	**26/07/19**	
	Inter turn fault protection	**26/07/19**	
34	Numerical examples	**27/07/19**	
	Tutorial	**27/07/19**	
	Transformer Protection		
35	Protection of transformers	**30/07/19**	
	Percentage differential protection	**30/07/19**	
36	Design of CT's ratio	**31/07/19**	
37	Buchholz relay protection	**01/08/19**	
38	Numerical examples	**02/08/19**	
39	Tutorial	**03/08/19**	
UNIT - IV FEEDER & BUSBAR PROTECTION			
CO4 : : Student can understand concept of bus bar protection and feeder protection using carrier current and over current protection techniques			
TB: SWITCH GEAR AND PROTECTION BY J B GUPTA,KATSON PUBLISHERS			
40	Protection of lines	**13/08/19**	Lecture interspersed with discussions
41	Over current protection	**14/08/19**	
42	PSM,TSM	**16/08/19**	
43	Numerical examples	**17/08/19**	
44	Carrier current protection	**20/08/19**	
45	Three zone distance relay using impedance relays	**21/08/19**	
46	Protection of bus bars	**22/08/19**	
47	Differential protection	**24/08/19**	
48,49	Tutorial	**27,28/08/19**	
UNIT - V STATIC & DIGITAL RELAYS			
CO5 : Ability to understand the operation of static relays and their application to transmission line protection			
TB: SWITCH GEAR AND PROTECTION BY J B GUPTA,KATSON PUBLISHERS			
50,51	Static relay components	**29,30/08/19**	Lecture interspersed with discussions
52	Static over current relay	**31/08/19**	
53,54	Static distance relay	**03,04/09/19**	
55,56	Microprocessor based digital relays	**05,06/09/19**	
57,58,59	Tutorial	**07,11,12/09/19**	

TENTATIVE LESSON PLAN: R1641024

Course Title: SWITCH GEAR AND PROTECTION(R1641024)		
Section :	**Date : 10/06/19**	**Page No :** 03 of 03
Revision No :	**Prepared By : B.INDRAJA**	**Approved By : HOD**

Tools : Black board, PPTs

No. of Periods	TOPIC	Date	Mode of Delivery
UNIT –VI PROTECTION AGAINST OVER VOLTAGE & GROUNDING **CO8:** They will understand the various neutral grounding schemes and their effect on power system it also covers various devices which are used for protection of overvoltage due to switching and lighting **TB: SWITCH GEAR AND PROTECTION BY J B GUPTA,KATSON PUBLISHERS**			
60	Generation of Over voltages in power system	**13/09/19**	Lecture interspersed with discussions
61	Protection against lighting arresters, valve, zinc L.A	**17/09/19**	
62	Insulation coordination, BIL, impulse ratio, Standard impulse test wave	**18/09/19**	
63	Volt time characteristics	**19/09/19**	
64	Grounded and ungrounded neutral systems	**20/09/19**	
65	Effects of ungrounded neutral on system performance	**21/09/19**	
66	Methods of neutral grounding - solid Resistance, Reactance	**24/09/19**	
67	Arcing grounds and grounding practices	**25/09/19**	
68,69,70, 71,72,73, 74	Tutorial	**26,27,28,01,03,04,05/10/19**	

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TENTATIVE LESSON PLAN: R164102D

Course Title: INSTRUMENTATION(R164102D)		
Section :	**Date: 10-06-2019**	**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 Signals and their representation **CO1: Able to represent various types of signals** **TB: Electronic Instrumentation–by H.S.Kalsi Tata MCGraw–Hill Edition, 1995**			
1	Measuring Systems	11.06.19	Lecture interspersed with discussions
2	Performance Characteristics	12.06.19	
3	Static and Dynamic characteristics	13.06.19	
4	Errors in Measurement	14.06.19	
5	Gross Errors – Systematic Errors	15.06.19	
6	Statistical analysis of random errors	18.06.19	
7	Tutorial	19.06.19	
8	Tutorial	20.06.19	
9	Tutorial	20.06.19	
10	Signal and their representation	25.06.19	
11	Standard test, periodic, aperiodic, modulated signal	27.06.19	
12	Sampled data pulse modulation and pulse code modulation	27.06.19	
13	problems	28.06.19	
14	problems	29.06.19	
15	problems	29.06.19	
UNIT-II Transducers **CO2:** **Acquire proper knowledge to use various types of Transducers.** **TB: A course in Electrical and Electronic Measurements and Instrumentation, A.K. Sawhney, Dhanpatrai& Co**			
16	Definition of transducers – Classification of transducers	02.07.19	Lecture interspersed with discussions
17	Characteristics and choice of transducers	04.07.19	
18	Advantages of Electrical transducers	04.07.19	
19	Principle operation of resistive Transducers	05.07.19	
20	Strain gauge and its principle of operation	05.07.19	
21	Guage factor	06.07.19	
22	Thermistors – Thermocouples	09.07.19	
23	Synchros	11.07.19	
24	Tutorial	11.07.19	
25	Piezo electric transducers – Photo diodes	12.07.19	
26	Principle operation of inductive Transducers	12.07.19	
27	LVDT,Application of LVDT	16.07.19	
28	Principle operation of capacitor transducers	18.07.19	
29	Tutorial	18.07.19	
30	Tutorial	19.07.19	

UNIT-III Measurement of Non–Electrical Quantities **CO3: Able to monitor and measure various parameters such as strain, velocity, temperature, pressure etc.** **TB: A course in Electrical and Electronic Measurements and Instrumentation, A.K. Sawhney, Dhanpatrai& Co**			
31	Measurement of strain, Gauge Sensitivity	19.07.19	Lecture interspersed with discussions
32	Measurement Displacement,Velocity,Angular Velocity,Acceleration	20.07.19	
33	Measurement of Force, Torque	23.07.19	
34	Measurement of Temperature	25.07.19	
35	Measurement of Pressure, Vacuum,	27.07.19	
36	Measurement of Flow, Liquid level	30.07.19	
37	Tutorial	01.08.19	
38	Tutorial	01.08.19	
39	Tutorial	02.08.19	
40	Tutorial	02.08.19	
UNIT-IV Digital Voltmeters **CO4: Acquire proper knowledge and working principle of various types of digital voltmeters.** **TB: A course in Electrical and Electronic Measurements and Instrumentation, A.K. Sawhney, Dhanpatrai& Co**			
41	Introduction to Digital voltmeters	02.08.19	Lecture interspersed with discussions
42	Successive approximation type voltmeters	03.08.19	
43	Ramp type digital voltmeter	14.08.19	
44	Tutorial	16.08.19	
45	Dual–Slope integration continuous balance type	16.08.19	
46	Microprocessor based ramp type	16.08.19	
47	Tutorial	20.08.19	
48	DVM digital frequency meter	20.08.19	
49	Tutorial	20.08.19	
50	Digital phase angle meter	20.08.19	
51	Tutorial	22.08.19	
52	Tutorial	22.08.19	
53	Tutorial	24.08.19	
UNIT-V Oscilloscopes **CO5:** **Able to measure various parameter like phase and frequency of a signal with the help of CRO.** **TB: A course in Electrical and Electronic Measurements and Instrumentation, A.K. Sawhney, Dhanpatrai& Co**			
54	Cathode ray oscilloscope – Time base generator	26.08.19	Lecture interspersed with discussions
55	Horizantal and vertical amplifiers	26.08.19	
56	Tutorial	30.08.19	
57	Measurement of phase and frequency – Lissajous patterns	30.08.19	
58	Sampling oscilloscope	31.08.19	
59	Tutorial	31.08.19	
60	Tutorial	03.09.19	
61	Analog and digital type data logger	03.09.19	
62	Transient recorder	05.09.19	

63	Tutorial	05.09.19	
64	Tutorial	06.09.19	
65	Tutorial	06.09.19	
UNIT-VI Signal Analyzers **CO6: Acquire proper knowledge and able to handle various types of signal analyzers.** **TB: A course in Electrical and Electronic Measurements and Instrumentation, A.K. Sawhney, Dhanpatrai& Co**			
66	Wave Analyzers	07.09.19	Lecture interspersed with discussions
67	Frequency selective analyzers	12.09.19	
68	Heterodyne – Application of Wave analyzers	12.09.19	
69	Tutorial	13.09.19	
70	Harmonic Analyzers – Total Harmonic distortion	13.09.19	
71	Spectrum analyzers – Basic spectrum analyzers, Spectral displays	17.09.19	
72	Tutorial	17.09.19	
73	Tutorial	19.09.19	
74	Vector impedance meter	19.09.19	
75	Q meter	20.09.19	
76	Peak reading and RMS voltmeters	20.09.19	
77	Tutorial	21.09.19	
78	Tutorial	21.09.19	
79	Tutorial	24.09.19	
80	problems	24.09.19	

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TENTATIVE LESSON PLAN: R164102F

Course Title: ELECTRIC POWER QUALITY(R164102F)		
Section :	Date:10/6/19	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 Introduction **CO1 : Differentiate between different types of power quality problems** **TB: R.C.Dugan " Electrical power system Quality ", 2012, McGraw Hill Publications**			
1	Overview of power quality	17/6/19	Lecture interspersed with discussions
2	Concern about the power quality	19/6/19	
3	General classes of power quality	20/6/19	
4	General classes of Voltage quality	21/6/19	
5	Transients	21/6/19	
6	Long–duration voltage variations	22/6/19	
7	Short–duration voltage variations	24/6/19	
8	Voltage unbalance	25/6/19	
9	Waveform distortion	27/6/19	
UNIT-II Voltage imperfections in power systems **CO2 : Explain the sources of voltage sag, voltage swell, interruptions, transients, long duration over voltages and harmonics in a power system.** **TB:R.C.Dugan " Electrical power system Quality ", 2012, McGraw Hill Publications**			
10	Power quality terms	28/6/19	Lecture interspersed with discussions
11	Voltage sags	1/7/2019	
12	Voltage swells and interruptions	1/7/2019	
13	**Tutorial**	2/7/2019	
14	Sources of voltage sag and interruptions	3/7/2019	
15	Sources of voltage swell and interruptions	4/7/2019	
16	Source of transient over voltages	5/7/2019	
17	Principles of over voltage protection	6/7/2019	
18	Devices for over voltage protection	8/7/2019	
19	Utility capacitor switching transients	8/7/2019	
20	Synchronous closing	9/7/2019	
21	Capacitor location	9/7/2019	
UNIT-III Voltage Regulation and power factor improvement **CO3 : Analyze power quality terms and power quality standards** **TB: R.C.Dugan " Electrical power system Quality ", 2012, McGraw Hill Publications**			
22	Principles of regulating the voltage	11/7/2019	
23	Device for voltage regulation	12/7/2019	
24	Utility voltage regulator application	15/7/19	
25	**Tutorial**	16/7/19	
26	Capacitor for voltage regulation	18/7/19	
27	End–user capacitor application	19/7/19	

28	Regulating utility voltage with distributed resources	20/7/19	Lecture interspersed with discussions
29	Flicker	23/7/19	
30	**Tutorial**	23/7/19	
31	Power factor penalty	25/7/19	
32	Static VAR compensations for power factor improvement	26/7/19	
33	Static VAR compensations for power factor improvement	26/7/19	
34	Flicker concept	27/7/19	
35	penalty power factor	29/7/19	
36	Types of flickers	30/7/19	
37	Sources of flickers	30/7/19	
38	Static var compensator	1/8/2019	
39	Tcs,tcr	1/8/2019	
40	tutorial	2/8/2019	
41	Tcr,tcs	2/8/2019	
42	Static var generator	2/8/2019	
UNIT-IV Harmonic distortion and solutions **CO4 : Explain the principle of voltage regulation and power factor improvement methods** **TB: R.C.Dugan " Electrical power system Quality ", 2012, McGraw Hill Publications**			
43	Voltage distortion vs. Current distortion	16/8/19	Lecture interspersed with discussions
44	Harmonics vs. Transients	19/8/19	
45	Harmonic indices	19/8/19	
46	**Tutorial**	21/8/19	
47	Sources of harmonics	22/8/19	
48	Effect of harmonic distortion	24/8/19	
49	**Tutorial**	27/8/19	
50	Impact of capacitors, transformers	27/8/19	
51	Impact of motors and meters	30/8/19	
52	**Tutorial**	31/8/19	
53	Point of common coupling	3/9/2019	
54	Passive and active filtering	5/9/2019	
55	**Tutorial**	6/9/2019	
56	Numerical problems	9/9/2019	
57	Numerical problems		
UNIT-V Distributed Generation and Power Quality **CO5 : Demonstrate the relationship between distributed generation and power quality.** **TB: R.C.Dugan " Electrical power system Quality ", 2012, McGraw Hill Publications**			
58	Resurgence of distributed generation	12/9/2019	Lecture interspersed with discussions
59	DG technologies	13/9/19	
60	Interface to the utility system	16/9/19	
61	**Tutorial**	16/9/19	
62	Power quality issues and operating conflicts	17/9/19	
63	DG on low voltage distribution networks	17/9/19	
64	DG on low voltage distribution networks	19/7/19	
65	**Tutorial**	20/9/19	

UNIT-VI Monitoring and Instrumentation

CO6 : Explain the power quality monitoring concepts and the usage of measuring instruments

TB: R.C.Dugan " Electrical power system Quality ", 2012, McGraw Hill Publications

66	Waveform distortion	23/9/19	Lecture interspersed with discussions
67	Historical perspective of PQ measuring instruments	23/9/19	
68	**Tutorial**	24/9/19	
69	PQ measurement equipment	27/9/19	
70	Assessment of PQ measuring data	28/9/19	
71	**Tutorial**		

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