Name of Faculty: arshad (theory) (Pr	
Discipline: EE	
Semester: 4th	
subject: electrical machine 1	
Lesson plan Duration: 15 weeks (jan 2018 to april 2018)	

week No.	theory		
	lecture no.	topic	practical No.
1	1	unit-1. Introducti on to	1
	2	Definition of motor and	
	3	torque developm ent due to alignment of two fields and	
	4	Electro-magnetica lly	
2	5	Elementar y concept	2
	6	Comparis on of generator	
	7	unit-2 DC	
	8	Main constructi	
3	9	Types of ar	3
	10	Function of the commutat	
	11	Function of the commutat	
	12	Factors determini ng	
4	13	Factors determini ng the electroma	4
	14	Types of dc	
	15	voltage built up in	

	16	generator	
5	17	Significanc e of back	5
	18	the relation between back emf	
	19	Armature	
	20	Commutat ion methods to	
6	21	Performa nce and	6
	22	types of	
	23	Speed control of	
	24	Speed control of	
7	25	Need of	7
	26	three point dc shunt	
	27	Applicatio	
	28	losses in dc	
8	29	swinburne'	8
	30	ASSIGNME	
	31	UNIT-3 Transform	
	32	Introductio	
9	33	Constructi onal features of a	9
	34	Working pr	
	35	EMF equat	
	36	Transforme	
10	37		10
	38	Transform	
	39	phasor diag	
	40	Mutual an	
11	41	Transform	11
	42	Equivalent	
	43	Relation b	
	44	relation	
12	45	Losses in a	12
	46	Open circu	
	47	efficiency-r	

12	48	Auto transform er	12
13	49	application	13
	50	Different types of	
	51	dry type tra	
	52	UNIT-4 Tra	
14	53	Constructi on of three phase transform ers and accessorie s of	14
	54	Conservat or, breather,	
	55	Types of three phase transform er i.e.	
	56	Conditions for	
15	57	On load tap	15
	58	Difference	
	59	Cooling of t	
	60	ASSIGNME	

Name of Faculty: ARSAD
Discipline: ECE
Semester: 4th
subject: ESMEE
Lesson plan Duration: 15 weeks (jan 2018 to april 2018)

week No.	**theory**	
	lecture no.	**topic**
1	1	1. Introduction
	2	Various energy sources
	3	energy sources
	4	importance ofconventional sources of energy,

	5	importance of non conventional sources of energy,
2	6	present scenario,
	7	future prospects
	8	economic criteria
	9	Solar Energy
	10	Principle of conversion of solar radiation into heat,
3	11	photo-voltaic cell
	12	electricity generation,
	13	application of solar energy like solar water heaters,
	14	solar furnaces,
	15	solar cookers,
4	16	solar lighting,
	17	solar pumping.
	18	3. Bio-energy
	19	Bio-mass conversion technologies- wet and dry processes.
	20	Methods for obtaining energy from biomass
5	21	Power generation by using gasifiers
	22	4. Wind Energy
	23	Wind energy conversion,
	24	
	25	electricity generation from wind
6	26	Types of wind mills
	27	local control
	28	energy storage
	29	
	30	Geo-thermal sources, Ocean thermal electric conversion,
7	31	open and closed cycles,
	32	hybrid cycle
	33	Prime movers for geo-thermal
	34	energy conversion.
	35	Steam Generation
	36	electricity
	37	generation.

8	38	various energy sources, importance of non conventional
	39	Conventional soures of energy
	40	Present scenario
9	41	6. Magneto Hydro Dynamic (MHD) Power Generation
	42	
	43	
	44	
	45	7. Chemical Energy Source
10	46	Design
	47	work output
	48	introduction to fuel cell
	49	uses of fuel cell
	50	operating principles of a fuel cell
11	51	conversion efficiency,
	52	e.m.f
	53	fule cell
	54	applications.
	55	8. Energy Conservation and Management (20 hrs)
12	56	Energy efficiency
	57	Its significance
	58	d) Energy efficient technology an overview
	59	Energy conservation in Domestic sector
	60	Lighting
13	61	Hopme appliances
	62	f) Need for energy efficient devices
	63	Energy conservation inindustrial sector
	64	Motors
	65	Industrial lighting,
14	66	Distribution system,
	67	pumps ,fans
	68	Bowlers etc
	69	Energy conservation in Agriculture sector
	70	Tube-well pumps
	71	Disel set
	72	generating sets,

15	73	Standby energy sources.
	74	i) Macro Level approach
	75	energy conservation at design stage.

Name of Faculty: Shilpa shukla(theory) Shilpa Shukla (Practical)
Discipline: EE
Semester: 4th
subject: Electronics -II
Lesson plan Duration: 15 weeks (jan 2018 to april 2018)

week No.	**theory**		**Practical**	
	lecture no.	**topic**	**practical No.**	**topic**
1	1	Transistor Audio Power Amplifier	1	To study the effect of coupling capacitor on lower cut off frequency and upper cut off frequency by plotting frequency response curve of a two stage RC coupled amplifier
	2	Difference between voltage and power amplifier		
	3	Important terms in Power Amplifier, collector efficiency, distortion and dissipation capability		
	4	Classification of power amplifier class A, B and C		
2	5	Class A single-ended power amplifier, its working and collector efficiency	2	To measure (a) optimum load (b) output power (c) signal handling capacity of a push-pull amplifier
	6	Class A single-ended power amplifier, its working and collector efficiency		
	7	Impedance matching in a power amplifier using transformer		
	8	Heat sinks in power amplifiers		
3	9	Push-pull amplifier: circuit details, working and advantages	3	
	10	Push-pull amplifier: circuit details, working and advantages		

	11	Principles of the working of complementary symmetry push-pull amplifier		
	12	Assignment-1		
4	13	Tuned Voltage Amplifier	4	To observe the effect of negative current feedback on the voltage gain of a single stage transistor amplifier by removing emitter bye-pass
	14	Series and parallel resonance		
	15	Single and double tuned voltage amplifiers		
	16	Single and double tuned voltage amplifiers		
5	17	Frequency response of tuned voltage amplifiers	5	To measure (a) voltage gain (b) input and output impedance for an emitter follower circuit
	18	Applications of tuned voltage amplifiers		
	19	Assignment-2		
	20	Feedback in Amplifiers		
6	21	Feedback and its importance, positive and negative feedback and their need	6	To measure frequency generation in (a) Hartley (b) R-C Phase Shift oscillator
	22	Voltage gain of an amplifier with negative feedback		
	23	Effect of negative feedback on voltag		
	24	output and input impedance of an amplifier		
7	25	Typical feedback circuits	7	To observe the differentiated and integrated square wave on a CRO for different values of R-C time constant
	26	Effect of removing the emitter by-pass capacitor on a CE transistor amplifier		
	27	Emitter follower and its applications		
	28	Assignment-3		
	29	Sinusoidal Oscillators		
	30	Sinusoidal Oscillators – positive feedback in amplifiers		Clipping of both

8	31	Difference between an oscillator and an alternator	8	portion of sine-wave using: a) diode and dc source b) zener diodes
	32	Essentials of an oscillator		
9	33	Circuit details and working of LC oscillators viz. Tuned Collector, Hartley and Colpitt's oscillators	9	
	34	Circuit details and working of LC oscillators viz. Tuned Collector, Hartley and Colpitt's oscillators		
	35	R-C oscillator circuits, phase shift and Wein bridge oscillator circuits		Clamping a sine-wave to: a) Negative dc voltage b) Positive dc voltage
	36	R-C oscillator circuits, phase shift and Wein bridge oscillator circuits		
10	37	Introduction to piezoelectric crystal and crystal oscillator circuit	10	To generate square-wave using an astable multivibrator and to observe the wave form on a CRO and verify the result using p-spice software
	38	Assignment-4		
	39	Wave-Shaping and Switching Circuits		
	40	Concept of Wave-shaping		
11	41	Wave-shaping circuits	11	
	42	R-C differentiating circuits		
	43	integrating circuits		
	44	Diode clipping circuits		
12	45	Diode clamping circuits	12	To observe triggering and working of a
	46	Applications of wave-shaping circuits		
	47	Transistor as a switch (explanation using CE transistor characteristics)		

	48	Collector coupled astable, monostable, bistable multivibrator circuits (explanation using wave shapes).		bistable multivibrator circuit and observe its output wave form on a CRO
13	49	uses of multivibrators, Working and applications of transistor inverter circuit using power transistors	13	To use the op-Amp (IC 741) as inverting one and non-inverting amplifiers, adder, comparator, integrator and differentiator and verify the result using p-spice software
	50	Assignment-5		
	51	Working Principles of different types of power supplies viz. CVTs, IC voltage regulator		
	52	Working Principles of different types of power supplies viz. CVTs, IC voltage regulator		
14	53	Assignment-6	14	To study the pin configuration and working of IC 555 and its use as monostable and astable multivibrator
	54	operational amplifier. The differential amplifier.		
	55	The emitter coupled differential amplifier. Offset even voltages and currents		
	56	Basic operational amplifier applications, integrator and differentiator, summer,		
15	57	subtractor	15	To realize the regulated power supply by using three terminal voltage regulator ICs such as 7805, 7905, 7915
	58	Familiarization with specifications and pin configuration of IC 741		
	59	Block diagram and operation of 555		
	60	Assignment-7		

Name of Faculty:	**karan kumar (Practical)**
Discipline:	**EE**
Semester:	**4th**
subject:	**EEDD**
Lesson plan Duration:	**15 weeks (jan 2018 to april 2018)**

week No.	theory			practical No.
	lecture no.		topic	
1	1	unit-1 Contractor Control Circuits		1
	2			
	3			
	4	D.O.L Starting of 3 phase induction motor		
	5			
	6			
2	7	3-phase induction motor getting supply from external feeder		2
	8			
	9			
	10	forward and reversing of three phase induction motor		
	11			
	12			
3	13	two speed control of three phase induction motor		3
	14			
	15			
	16	limit switch control of three phase induction motor		
	17			
	18			
4	19	sequential operation of two motors using time delay relay		4
	20			
	21			
	22	manually generated star delta starter for 3-phase induction motor		
	23			
	24			
5	25	automatic star delta starter for 3-phase induction motor		5
	26			
	27			
	28	unit-2 Earthing		
	29			
	30			
6	31	concept and purpose of earthing		6
	32			
	33			
	34	Different types of earthing, drawings of plate and pipe earthing		
	35			
	36			
7	37	Procedure of earthing, test of materials required and costing		7
	38			
	39			
	40			

	41	Method of reducing earth resistance	
	42		
8	43	Relevant IS specifications of earth electrode for earthing a transformer, a high building	8
	44		
	45		
	46	Earthing layout of distribution transformer	
	47		
	48		
9	49	Substation earthing layout and earthing materials	9
	50		
	51		
	52	Key diagram of 11KV, 33Kv, 66KV, 132 KV sub-stations	
	53		
	54		
10	55	unit -3 Drawings of Machine Parts	10
	56		
	57		
	58	End cover of induction motor	
	59		
	60		
11	61	Rotor of a squirrel cage induction motor	11
	62		
	63		
	64	Field coil of a DC motor	
	65		
	66		
12	67	Terminal plate of an induction motor	12
	68		
	69		
	70	Motor body (induction motor) as per IS specifications	
	71		
	72		
13	73	Sliprings of 3-phase induction motor	13
	74		
	75		
	76	assignment	
	77		
	78		
14	76		14
	80		
	81		
	82		
	83		
	84		
	85		
	86		
15	87		15
	88		
	89		
	90		

Name of Faculty: karan kumar(theory) (Practical)
Discipline: EE & ECE
Semester: 4th
subject: Instrumentation
Lesson plan Duration: 15 weeks (jan 2018 to april 2018)

week No.	theory		Practical	
	lecture no.	topic	practical No.	topic
1	1	1. Measurements:	1	To measure the level of a liquid using a transducer
	2	Importance of measurement, basic measuring systems, advantages and limitations of each		
	3	measuring systems and display devices		
2	4	2. Transducers:	2	Study and use of digital temperature controller
	5	Theory, construction and use of various transducers (resistance)		
	6	inductance		
3	7	capacitance	3	Study of variable capacitive transducer
	8	electromagnetic		
	9	piezo electric		
4	10	3. Measurement of Displacement and Strain	4	Draw the characteristics of a potentiometer
	11	Displacement Measuring Devices: wire wound potentiometer, LVDT, strain gauges		
	12	different types such as inductance type		
5	13	resistive type	5	
	14	wire and foil type		
	15	gauge factors		
6	16	selection of gauge material	6	To study the use of electrical strain gauge
	17	use of electrical strain gauge		
	18	strain gauge		
	19	bridge and amplifier		
	20	4. Force and Torque Measurement		

7	21	Different types of force measuring devices and their principles	7	do
8	22	load measurements	8	Use of themistor in ON/OFF transducer
	23	elastic transducers		
	24	electrical strain gauges		
9	25	load cells	9	To study weighing machine using load cell
	26	measurement of torque by brake		
	27	dynamometer		
10	28	electric strain gauges	10	do
	29	speed measurement; different methods, devices		
	30	5. Pressure Measurement		
11	31	Bourdon pressure gauges	11	To measure linear displacement using LVDT
	32	principle and construction		
	33	electric pressure pick ups		
12	34	construction and applications of electric pressure pick ups	12	do
	35	6. Flow Measurement		
	36	Basic principle		
13	37	magnetic flow meters	13	do
	38	ultrasonic flow meters		
	39	7. Measurement of Temperature		
14	40	Bimetallic thermometer, thermoelectric thermometers	14	To measure temperature using a thermo-couple
	41	resistance thermometers, thermocouple		
	42	thermisters and pyrometer		
15	43	temperature recorder	15	To study pH meter.
	44	8. Measurement of other non electrical quantities		

	45	humidity, pH, level and vibrations		

Name of Faculty: Istak (Theory/Practical)
Discipline: EE
Semester: IVth
subject: Estimation and Costing in Electrical Engg.
Lesson Plan Duration: 16 weeks (jan 2018 to april 2018)

Week No.	Theory		
	Lecture No.	Topic	
1	1	**1.Introduction:** Purpose of estimating and costing, proforma for making estimates	
	2	Preparation of materials schedule, costing, price list,preparation of tender document	
	3	Pet price list, market survey, overhead and labour charges	
	4	Electrical point method and fixed percentage method	
2	5	Contingency, profit, purchase system,	
	6	Enquiries, comparative statements	
	7	Orders for supply and payment of bills.	
	8	Tenders – its constituents, finalization, specimen tender.	
3	9	**2.Types of wiring**: Cleat, batten	
	10	Casing capping and conduit wiring,	
	11	Comparison of different wiring systems,	

	12	Selection and design of wiring schemes for particular situation(domestic and industrial)
4	13	Selection of wires and cables
	14	Wiring accessories
	15	Use of protective devices
	16	MCB
5	17	ELCB
	18	Use of wire-gauge and tables (to be prepared/arranged)
	19	**3.Estimating and Costing**: Domestic installations
	20	description of various tests to test the wiring installation before commissioning,
6	21	do
	22	standard practice as per IS and IE rules
	23	Planning of circuits
	24	subcircuits
7	25	position of different accessories
	26	electrical layout
	27	preparing estimates including cost as per schedule rate pattern
	28	do
8	29	actual market rate (for house of two room set along with layout sketch).
	30	do
	31	Industrial installations
	32	relevant IE rules
9	33	IS standard practices
	34	planning,
	35	designing and estimation of installation for single phase motors of different ratings,

	36	do
10	37	electrical circuit diagram
	38	starters,
	39	preparation of list of materials,
	40	estimating and costing exercises on workshop with singe-phase
11	41	do
	42	3-phase motor load
	43	light load (3-phase supply system)
	44	Service line connections estimate for domestic upto 10 KW
12	45	Industrial loads upto 20 KW (over-head and under ground connections) from pole to energy meter.
	46	**4.Estimating the material required for**: Transmission
	47	distribution lines (overhead and underground)
	48	Planning
13	49	designing of lines with different fixtures
	50	earthing etc. based on unit cost calculations
	51	Substation: Types of substations
	52	substation schemes
14	53	components,
	54	estimate of 11/0.4 KV pole mounted substation up to 200 KVA rating,
	55	methods of earthing of substations,
	56	Key Diagram of 66 KV/11KV

15	57	11 KV/0.4 KV Substation
	58	Single line diagram
	59	layout sketching of outdoor
	60	indoor 11kV sub-station or 33kV substation

actical)

Practical topic
Measurement of the angular displacement of the rotor of a slip-ring induction motor on application of DC to stator of motor winding in sequence and simultaneously to each phase of rotor winding
do
do
do

2. Speed control of dc shunt motor (i) Armature control method (ii) Field control method
Do
3. Study of dc series motor with starter (to operate the motor on no load for a moment)
4. Study of 3 point starter for starting D.C. shunt motor.
5. To perform open circuit and short circuit test for determining: (i) equivalent circuit (ii) the regulation and (iii) efficiency of a transformer from the data
6. To find the efficiency and regulation of single phase transformer by actually
7. Checking the polarity of the windings of a three phase transformer and

8. Finding the voltage and current relationships of primary and secondary of a three phase
transformer under balanced load in various configurations conditions such as (a) Star-star(b) Star delta(c) Delta star(d) Delta - Delta configuring conditions.

Practical
topic