GZSCCET MRSPTU BATHINDA
Department of Electrical Engineering

Academic Session: July-Dec 2019   **Course/Branch:** B Tech (EE)   **Batch/Sem:** 2017/5th
Subject Name: Asynchronous Machines   **Subject Code: BELE1-516**
L T P C: 3 1 0 4   **Duration:**   **48 Hours**
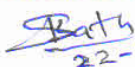**Subject Teacher:** Dr. S. K. Bath   **LECTURE PLAN**

(Tentative)

Sr. No.	Date	Day	Lecture/ Tutorial	Cumulative L+T G1	G2	Topic
1.	15/7	M	L+T (G1)	2	1	Review of basics of electrical engg.
2.	19/7	F	L	3	2	Review of basics of electrical electric machines
3.	22/7	M	L+T (G1)	5	3	Constructional features & Types of induction motors, Numerical problems related to basic electrical circuits
4.	23/7	T	L+T (G2)	6	5	Production of rotating field, Practice of related phasor diagrams
5.	26/7	F	L	7	6	Principle of operation, speed and slip, frequency of rotor voltage and current
6.	29/7	M	L+T1	8	7	Rotor current, rotor copper loss and rotor input, Solving correlated numerical problems
7.	30/7	T	L+T2	9	9	Developed torque, power output, starting torque, and condition for maximum torque, Solution of numericals
8.	02/8	F	L	10	10	Torque-slip and torque-speed characteristics
9.	05/8	M	L+T1	12	11	Relationship between starting torque, full load torque and maximum torque and Practice of numericals
10.	06/8	T	L+T2	13	13	Analogy between induction motor and transformer and Development of stator circuit model and rotor circuit model of an induction motor, Numerical problems
11.	07/8	W	L	14	14	Separation of mechanical load from rotor copper loss and development of equivalent circuit model referred to stator, approximate equivalent circuit
12.	14/8	W	L+T2	15	16	Related numerical exercises
13.	16/8	F	L+T1	17	17	Starting methods, Direct-on-line starter, Star-delta starter, solving numerical problems
14.	19/8	M	L	18	18	Auto transformer starter, slip ring induction motor starter
15.	21/8	W	L+T2	19	20	Efficiency, no load test and blocked rotor test, solving numerical problems
16.	26/8	M	L	21	21	Construction and significance of circle diagram
17.	28/8	W	L+T2	22	23	Different types of cage motors and their comparison, solving numerical problems
18.	30/8	F	L+T1	24	24	Different speed control methods: pole changing methods, PAM technique, solving numericals
19.	02/9	M	L	25	25	Speed control methods continue: stator voltage control, variable frequency control
20.	04/9	W	L+T2	26	27	Rotor resistance control, effect of voltage injection in rotor circuit of slip ring induction motor, solving numericals
21.	06/9	F	L+T1	28	28	Isolated and Grid mode operation of Induction generator, solving numerical problems
22.	09/9	M	L	29	29	Method of Excitation
23.	11/9	W	L+T2	30	31	Characteristics of three-phase self excited induction generator

Asynchronous Machines B Tech / 5th sem

24.	13/9	F	L+T1	32	32	Introduction to doubly fed induction generator
25.	16/9	M	L	33	33	Introduction to Single phase motors
26.	17/9-21/9	Tu-Sat	1st Test	35	35	Test Week ------------------
27.	23/9	M	L	36	36	Double revolving field theory
28.	25/9	W	L+T2	37	38	Rotor slip with respect to two rotating fields, torque-speed characteristics of single-phase induction motor, solving numerical problems
29.	27/9	F	L+T1	39	39	Equivalent circuit of a single-phase induction motor, solving numerical problems
30.	30/9	M	L	40	40	Performance calculations of a single-phase induction motor
31.	04/10	F	L+T1	42	41	Determination of equivalent circuit parameters, solving numerical problems
32.	07/10	M	L	43	42	Starting methods and types of single phase motors
33.	09/10	W	L+T2	44	44	Split phase induction motors, characteristics and applications, solving numerical problems
34.	11/10	F	L+T (G1)	46	45	Capacitor start and capacitor run motors, solving numerical problems
35.	14/10	M	L	47	46	Shaded pole motor, construction, working principle and characteristics
36.	16/10	W	L+T2	48	48	Universal motor: construction, principle of operation and applications, solving numerical problems in tutorial
37.	18/10	F	L+T1	50	49	Reluctance motor, construction, working principle and applications, solving numerical problems in tutorial
38.	21/10	M	L	51	50	Linear Induction motor: construction, principle of operation and applications
39.	23/10	W	L+T2	52	52	Stepper Motor: construction and principle of operation of variable reluctance stepper motor, solving numerical problems in tutorial
40.	25/10	F	L+T1	54	53	Multi-stack variable reluctance stepper motor: construction and principle of operation, solving numerical problems
41.	28/10	M	L	55	54	Permanent magnet stepper motor
42.	30/10	W	L+T2	56	56	Hybrid stepper motor, solving numerical problems in tutorial
43.	01/11	F	L+T1	58	57	Torque pulse rate characteristics of stepper motors and applications, solving numericals
44.	04/11	M	L	59	58	Revision of syllabus of unit I
45.	06/11	W	L+T2	60	60	Revision of unit I, Written quiz test
46.	08/11	F	L+T1	62	61	Revision of syllabus of unit II, Written quiz test
47.	11/11	M	L	63	62	Revision of syllabus of unit III
48.	13/11	W	L+T2	64	64	Revision of unit III, Written quiz test
49.	15/11	F	L+T1	66	65	Revision of unit IV, Written quiz test
50.	18/11 22/11	M F	2nd test	68	67	Test week ------------------

Bath
22-8-19
Dr. S. K. Bath
Prof. EED

Academic Session: Aug-Dec 2019

Course/Branch: B.Tech (EE)

POWER ELECTRONICS AND DRIVES (BELE-1-517)

Batch/Semester: 2016 / 5th

LECTURE PLAN

Sr.No	Lecture No.	Date	Day	Topic
1	Lec #1	15-Jul	Monday	Introduction to Power Electronics, Basic Needs of Power Electronics, Syllabus & Objective Discussion
2	Lec #2	16-Jul	Tuesday	Introduction to Thyristor family and SCR,
3	Lec #3	19-Jul	Friday	Constructional features of SCR
4	Lec #4	22-Jul	Monday	SCR static & dynamic characteristics
5	Lec #5	23-Jul	Tuesday	Turn-on and turn-off methods of SCR
6	Lec #6	26-Jul	Friday	Firing circuits of SCR
7	Lec #7	29-Jul	Monday	Ratings and protection of SCR'S,
8	Lec #8	30-Jul	Tuesday	Series and parallel operation of SCR
9	Lec #9	02-Aug	Friday	Commutation circuits of SCR
10	Lec #10	05-Aug	Monday	Doubt Session of complete Unit-I
11	Lec #11	06-Aug	Tuesday	Introduction to Phase Controlled Converters, Principle of phase control
12	Lec #12	09-Aug	Friday	Single phase converter circuits with R loads
13	NIL	12-Aug	Monday	Govt. Holiday (Id-Ul-Zuha-Bakrid)
14	Lec #13	13-Aug	Tuesday	Single phase converter circuits with L loads
15	Lec #14	16-Aug	Friday	Single phase converter circuits with RL loads
16	Lec #15	19-Aug	Monday	Single phase converter circuits with RLC loads
17	Lec #16	20-Aug	Tuesday	Single phase converter circuits with RLC load and freewheeling diode
18	Lec #17	23-Aug	Friday	Three phase converter circuits with R loads
19	Lec #18	26-Aug	Monday	Three phase converter circuits with L loads
20	Lec #19	27-Aug	Tuesday	Three phase converter circuits with RL loads
21	Lec #20	30-Aug	Friday	Three phase converter circuits with RLC loads
22	Lec #21	02-Sep	Monday	Three phase converter circuits with RLC load and freewheeling diode
23	Lec #22	03-Sep	Tuesday	Dual converters and their operation
24	Lec #23	06-Sep	Friday	Introduction to DC Choppers: Principle of chopper operation
25	Lec #24	09-Sep	Monday	Control strategies of choppers
26	Lec #25	10-Sep	Tuesday	Step up and step down choppers
27	Lec #26	13-Sep	Friday	Voltage, current and load-commutated choppers
28	Lec #27	16-Sep	Monday	Doubt Session of complete Unit-II
29	NIL	17-Sep	Tuesday	FIRST HOUSE TEST
30	NIL	20-Sep	Friday	FIRST HOUSE TEST
31	Lec #28	23-Sep	Monday	Introduction to Inverters: Single phase Voltage source bridge inverters
32	Lec #29	24-Sep	Tuesday	Modified Mc-Murray half bridge inverter, series inverters
33	Lec #30	27-Sep	Friday	Three phase bridge inverters with 1800 and 1200 modes.
34	Lec #31	30-Sep	Monday	Single phase PWM inverters, Current source inverters
35	Lec #32	01-Oct	Tuesday	AC Voltage Controllers: Types of single-phase voltage controllers,
36	Lec #33	04-Oct	Friday	Single-phase voltage controller with R and RL type of loads.
37	Lec #34	07-Oct	Monday	Doubt Session of Inverter, controllers
38	NIL	08-Oct	Tuesday	Govt. Holiday (Dussehra)
39	Lec #35	11-Oct	Friday	Cycloconverters: Principle of operation
40	Lec #36	14-Oct	Monday	Single phase to single phase step up and step down Cycloconverters
41	Lec #37	15-Oct	Tuesday	Three phase to single phase cycloconverters,
42	Lec #38	18-Oct	Friday	Doubt Session of complete Unit-III
43	Lec #39	21-Oct	Monday	DC motor drive – starting, braking, transient analysis
44	Lec #40	22-Oct	Tuesday	Speed control, controlled rectifier converters for DC drives
45	Lec #41	25-Oct	Friday	Chopper fed DC drives
46	NIL	28-Oct	Monday	Govt. Holiday (Diwali)
47	Lec #42	29-Oct	Tuesday	Revision of DC Drives
48	Lec #43	01-Nov	Friday	AC Motor Drives Induction motor drive – starting, braking, transient analysis
49	Lec #44	04-Nov	Monday	Speed control, ac controller fed induction motor
50	Lec #45	05-Nov	Tuesday	Voltage source inverter, current source inverter and cyclo-converter fed induction motor drive
51	Lec #46	08-Nov	Friday	Revision & Doubt Session of complete Unit-IV
52	Lec #47	11-Nov	Monday	Revision & Doubt session of Unit-I
53	Lec #48	12-Nov	Tuesday	Revision & Doubt Session of Unit-II
54	Lec #49	15-Nov	Friday	Revision & Doubt Session of Unit-III

Prepared By: Er.Vishavdeep Jindal, Asstt. Prof., EED

Vijy
12/07/19

12-7-19
Head, EED

GIANI ZAIL SINGH CAMPUS COLLEGE OF ENGINEERING & TECHNOLOGY, MRSPTU, BATHINDA-151001
DEPARTMENT OF ELECTRICAL ENGINEERING

TEACHING PLAN

SESSION: JULY-DEC 2019(ODD)
COURSE: B.TECH
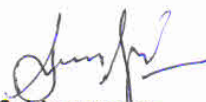**SUBJECT: PED LAB**
BATCH: 2K17
SEMESTER: 5th
SUBJECT CODE: BELEE0-101
SUBJECT I/C: ER. SANDEEP PAL SINGH (AP), EE DEPTT.
LAB TECHNICIAN: CHHINDERPAL SINGH

S. No.	DATE (G1)	DATE (G2)	EXPERIMENT
1.	5/8/19	6/8/19	To obtain V-I characteristics of SCR and measure latching and holding currents.
2	19/8/19	20/8/19	To plot V-I Characteristics of UJT
3	26/8/19	27/8/19	To obtain triggering wave forms for SCR using R and RC firing circuits.
4	2/9/19	3/9/19	To obtain output voltage waveforms of single phase half wave controlled rectifier for RL load.
5	9/9/19	10/9/19	To obtain output voltage wave forms for single phase full-wave controlled rectifiers with resistive and inductive loads.
6	16/9/19	17/9/19	To simulate three phase bridge rectifier and draw load voltage and load current waveform for resistive and inductive loads.
7			VIVA 1
8	30/9/19	1/10/19	To study different types of chopper circuits and obtain waveforms for at least one of them.
9	7/10/19	15/10/19	To simulate single phase inverter using different modulation techniques and obtain load voltage and load current waveform for different types of loads.
10	14/10/19	22/10/19	To simulate single phase full wave ac voltage controller and draw load voltage and load current waveforms for inductive load.
11	21/10/19	29/10/19	To study single phase cycloconverter.
12	4/11/19	5/11/19	To study speed control of induction motor using thyristor.
13	11/11/19	19/11/19	To study speed control of DC motor using thyristor
14	18/11/19	26/11/19	VIVA 2

Lab Technician

Subject Teacher

HOD (EED)

PROPOSED LECTURE PLAN (Session: Aug 2019- Nov 2019)
PERSONNEL AND INDUSTRIAL MANAGEMENT-EE

Internal Marks: 40
External Marks: 60
Total Marks: 100

Month	Name of Chapter	Contents
Aug 2019	1. **Introduction to HRM** 2. **Human Resource Planning** 3. **Recruitment** 4. **Selection** 5. **Induction** 6. **Placement**	Introduction: Introduction to Human Resource Management and its definition, functions of Human Resource Management & its relation to other managerial functions. Nature, Scope and Importance of Human Resource Management in Industry. Need for Human Resource Planning; Process of Human Resource Planning; Methods of Human Resource Planning; Recruitment; Concept of Recruitment; Process & Methods of Recruitment; Psychological tests and interviewing. Meaning and Concept of Placement and Induction; Importance of Placement and Induction.
Sept 2019	7. **Training and Development** 8. **Job Analysis and Design** 9. **Performance Appraisal**	Training & Development: Concepts and Methods. Difference between training and Development; Principles of Training; Employee Development. Job analysis & Design: Job Analysis: Job Description & Job Specification. Concept and Importance of Performance Appraisal; Methods & Process of Performance Appraisal.
Oct 2019	10. **Internal Mobility** 11. **Compensation** 12. **Incentive Plans** 13. **Fringe Benefits** 14. **Collective Bargaining**	Promotion, Transfer, Demotion, Seperation. The Compensation Function: Basic concepts in wage administration, company's wage policy, Issues in wage administration, Elements and Methods of Wage & Salary: Bonus, Fringe Benefits & Incentives. Importance of collective Bargaining.
Nov 2019	14. Industrial Relations 15. **Participative Management** 16. **Employee Grievance**	Human Relations and Industrial Relations; Difference between Human Relations and Industrial Relations, Factors required for good Human Relation Policy in Industry; Employee Employer relationship; Causes and Effects of Industrial disputes; Employees Grievances & their Redressal, Administration of Discipline, Communication in organization, Absenteeism, Labour Turnover.

Rachana Baldi

RBaldi

GIANI ZAIL SINGH CAMPUS COLLEGE OF ENGINEERING & TECHNOLOGY, MRSPTU, BATHINDA-151001
DEPARTMENT OF ELECTRICAL ENGINEERING

TEACHING PLAN

SESSION: JULY-DEC 2019(ODD)   **BATCH: 2K17**
COURSE: B.TECH   **SEMESTER: 5th**
SUBJECT: GENERATION & ECONOMICS OF ELECTRIC POWER
SUBJECT CODE: BELE1-518
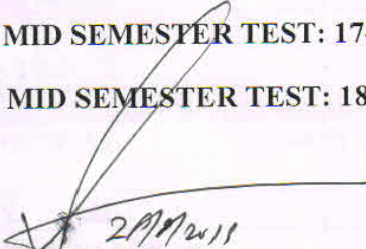**SUBJECT I/C: Dr. VED PARKASH (AP), EE DEPTT.**
L T P C 3 1 0 4

DURATION: 42 Hrs.

Proposed hrs.	S. No.	Topics	Date
UNIT 1			
Loads and Load Curve	1	Introduction and Importance of Subject	15/07/19
	2	Types of load (fixed voltage loads, resistive loads, Inductive motor loads	17/07/19
	3	Effect of load on supply voltage	22/07/19
	4	Maximum demand	24/07/19
	5	Types of load	25/07/19
	6	Group diversity factor, peak diversity factor	29/07/19
	7	Chronological load curves	31/07/19
	8	Load duration curve	01/08/19
	9	Mass curves	05/08/19
	10	Load factor, capacity factor	08/08/19
	11	Utilization factor	09/08/19
	12	Base load and peak load plants	20/08/19
	13	Load forecasting	21/08/19
	14	Test of Unit-I	22/08/19
UNIT II			
	15	Cost of Electrical Energy, Capital cost of plants	27/08/19
Power Plant Economics	16	effect of load factor on cost of energy	28/08/19
	17	Annual fixed cost, operating costs	29/08/19
	18	Depreciation and its types	03/09/19
	19	Tariffs and different types of tariff (domestic, commercial, agricultural and industrial loads).	04/09/19
	20	Objectives of tariff making	05/09/19
	21	Power factor improvement	06/09/19
	22	Need for power factor improvement	10/09/19
	23	Power factor improvement using capacitors	11/09/19
	24	Determination of economic power factor	12/09/19
	25	Test of Unit-II	13/9/19
UNIT III			
Selection of Plant	26	Plant location, plant size, number and size of units in plants	24/09/19

	27	Economic comparison of alternatives based on annual cost methods	25/09/19
	28	Economic comparison of alternatives based on rate of return	26/09/19
	29	Economic comparison of alternatives based on present worth and capitalized cost	01/10/19
	30	Economic operation of steam plants	03/10/19
	31	Methods of loading turbo generators	09/10/19
	32	Input- output curve, heat rate, incremental cost	10/10/19
	33	Method of Lagrangian multiplier	15/10/19
	34	Effect of transmission losses, co-ordination equations	16/10/19
	35	Iterative procedure to solve co-ordination equations	17/10/19
	36	Test of Unit-III	22/10/19
UNIT IV			
Hydro-Thermal Co-ordination	37	Advantages of combined working of Run-off River plant and steam plant	23/10/19
	38	Advantages of combined working of Reservoir hydro plants and thermal plants	24/10/19
	39	Long-term operational aspects	29/10/19
	40	Scheduling methods	30/10/19
	41	Scheduling methods	31/10/19
	42	Cogeneration: Definition and scope	05/11/19
	43	Topping and Bottoming Cycles,	06/11/19
	44	Benefits, cogeneration technologies.	07/11/19
	45	Test of Unit-IV	13/11/19

1ST MID SEMESTER TEST: 17-22 SEPT, 2019

2ND MID SEMESTER TEST: 18-22 NOV,2019

Dr. VED PARKASH
Assistant Professor
EE DEPTT.