

G P Kangra

GPK-F-18

Practical Planning & Coverage Status

Department: EE
Course: Diploma.

Laboratory: EPT&D lab.
Subject: EPT&D lab.

Sr. No.	Details of Practical	Availability of		Likely Turn/Date	Actual Date	Responsibility	HOD Sign.	Remarks
		Equipment Set up	STD Ref. Write up					
1.	Prepare a report based on transmission line network in H.P.							
2.	Collect Information on components of transmission line.							
3.	Evaluate transmission line performance parameters of a given line.							
4.	Library/Internet Survey of Electrical High voltage line & HVDC line.							
5.	Visit of 33/11KV & 11kv/kv Distribution substation & write a Report.							
6.	Micro Project:							

Approved/ Not approved

[Signature]
HOD Sign with date

27-01-2026

Principal Signature with date

PLANNED SYLLABUS COVERAGE(Theory)

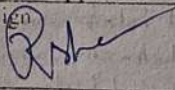
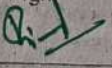
G P Kangra		Department: <u>Electrical Engg.</u>	Subject: <u>IS & SEM</u>			
SYLLABUS COVERAGE		Course: <u>Diploma</u>	Duration: <u>03 year</u>			
		Total Periods: <u>56</u>	Theory: <u>56 (14x4=56)</u>			
Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	1-15	Three phase Induction motor	working principle, production of rotating magnetic field, synchronous speed, rotor speed & slip. Constructional details of 3-phase I.M.; squirrel cage & slip ring I.M. & slip. Rotor quantities, frequency, induced emf, power factor at starting & running condition. Characteristics of torque vs. slip(speed). Torques, starting, full load & maximum with relations among them. I.M. as a generalised transformer with phasor diagram, four quadrant operation, power flow diagram. Starters: need & types, starter resistance, auto transformer starter, delta, rotor resistance & soft starters, speed control methods, stator V/f, pole changing, rotor resistance & v/f, motor selection for different applications as per the load torque speed requirements. maintenance of 3- ϕ I.M.	Electric machines by P.S. Bimbhra, & Electric machine by Kothari, D.P. & Nagrath.		
2.	16-26	Single phase Induction motors	Double field revolving theory, principle of making self start. Construction & working, resistance start induction run, capacitor start induction run, capacitor start capacitor run, shaded pole, repulsion type, series motor, universal motor, hysteresis motor, torque speed characteristics, motor selection for diff applications, maintenance of 1- ϕ I.M.			

To be approved from concerned HOD within seven days from beginning of semester & will be kept with the concerned teacher in his file.

Sr. No.	Period No.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
3.	27-42	Three phase Alternators	Principle, working, parts & stationary armatures, constructional details, parts & their functions, rotor construction, windings: single & double layer. Emf equations of alternator with numericals, pitch factor & distribution factor, Alternating loading, terminal voltage, Armature resistance & leakage reactance drop, Armature reaction at various power factors & synchronous impedance, V _g regulation, direct loading & synchronous impedance maintenance of alternator.			
4.	43-51	Synchronous motors	Principle working operations & significance of load angle, Torque, Starting torque, running torque, pull in torque, Synchronous motor on load with V-curves, inverted V-curves, Hunting, Constant excitation (numerical), effect of excitation (numerical), starting methods, losses in s.m. & efficiency (numerical).			
5.	52-56	FHP motors	Construction & working, SRM, Saturated reluctance motor, RLP, PMSM, Stepper motor, AC & DC servomotors, Torque speed characteristics, Application.			

Extra Topics to be covered beyond the scope of the syllabus (as required by industry/ as recommended by Teacher which he/ she finds necessary)

Sr. No.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks

Approved / Not approved	
Date 27-01-2026	HOD Sign 
Date	Principal Sign 

2 additional sheets (if required).

PLANNED SYLLABUS COVERAGE(Theory)

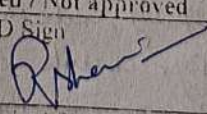
G P Kangra		Department: <u>Electrical Engg.</u> Subject <u>FPE</u>				
SYLLABUS COVERAGE		Course <u>Diploma</u> Duration <u>03 year</u>				
		Total Periods <u>56</u> Theory <u>56 (14x4=56)</u>				
Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	1-8	Power Electronics Devices	> Power electronic devices, power transistor, construction, working principle, VI characteristics & uses, IGBT, construction, working principle, VI characteristics & uses. Concept of single electron transistor (SET) - aspects of nanotechnology.			
2.	9-20	Thyristor family devices	> SCR construction, two transistor analogy, types, working & characteristics. SCR mounting & cooling. Types of Thyristors: SCR, LASCR, SCS, GTO, UJT, PUT, DIAC & TRIAC. Thyristor family devices: symbol, construction, operating principle & VI characteristics. Protection circuits, over-voltage, over current, snubber, crowbar	Power Electronics by P.S. Bhimra & P.E. Circuits devices & application by M. Rashid.		
3.	21-34	Turn on & Turn off methods of Thyristors	> SCR turn on methods: High voltage thermal triggering, Illumination triggering, dv/dt triggering, Gate triggering, Gate trigger circuits - Resistance & resistance capacitance circuits. SCR triggering using UJT, PUT: Relaxation oscillator & synchronized UJT circuit. Pulse transformer & optocoupler based triggering.			

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4.	35-48	Phase controlled Rectifiers	SCR turn-off methods: class-A series resonant commutation ckt, class-B-shunt resonant commutation, class C-complimentary symmetry commutation ckt, class D-Auxiliary commutation, class E-external pulse, class F-Line or natural commutation. Phase control: firing angle, conduction angle, 1- ϕ half controlled, full controlled & midpoint controlled rectifier with R, RL Load, circuit diagram, working, i/p o/p waveforms, equations for DC o/p & effect of freewheeling diode. Different configuration of bridge rectifiers: full, half bridge, tap. Common anode cathode, SCR in one comm. Applications: Burglar's alarm system, Battery charger using SCR, Emergency light system, Temperature controller using SCR & illumination, fan speed control TRIAC/SCRs UPS: offline & online, SCR based ACL DC circuit breakers.			
5.	49-56	Industrial Control circuits				

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4 of additional sheets (if required).

PLANNED SYLLABUS COVERAGE(Theory)

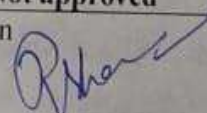
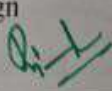
G P Kangra		Department: <u>EE</u> Subject <u>BM & M HPP</u>				
SYLLABUS COVERAGE		Course <u>Diploma</u> Duration <u>03 years</u>				
		Total Periods <u>56</u> Theory <u>56</u>				
Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	12 (1-12)	Unit I	Properties of solid fuel for biomass power plant, Bagasse, wood chips, rice husk, municipal waste. Properties of liquid solid, gas fuels. Biomass power plants - Jatropha, bio-diesel, gasifier, gas plant. Layout of thermo chemical based power plant layout of Agro chemical based power plant.	Wind Power Technologies		
2.	12 (13-24)	Unit-II	The basic principle to convert agricultural forest - try products & wood processing and remains into combustible gas, general construction & working of a typical gasifier Power gasifier in gas engine. Strengths & limitations of Agriculture & forestry products gasifier. Primitive maintenance steps. Diff. types of biomass gasifiers.	Rachel Stathi	Energy Technology	
3.	13 (25-37)	Unit-III	Construction & working of the following types of gasifiers, Rice husk, straw gasification, Bamboo waste, bamboo chips, gasification, Coconut husk.		I.P. Gupta	

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4.	⁹ (38-46)	Unit-IV	Coconut peat, sugar cane trash. Gas plant, specifications & maintenance of it. Location of microhydro power plant energy conservation process, in hydro power plant and their classification, General layout of typical microhydro power plant. Strengths & Limitations.	11	11	
5.	¹⁰ (47-56)	Unit-V	Construction & working of high head, Pelton turbine, specifications, Construction of medium head, Francis turbine. Construction & working of low head, Kaplan turbine. Preventive maintenance & safe practices of hydro power plant.			

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PLANNED SYLLABUS COVERAGE(Theory)

G Ka SYI CO	ABUS RAGE	Department: <u>AS & H</u> Subject <u>EKIT</u>		Course <u>Diploma in EE, ME & IE</u> Duration <u>3 years</u>		Remarks
		Total Periods _____ Theory <u>2/week 28 Theory</u>				
Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	
1.	1-7	Unit - 1 Indian Knowledge System	• Introduction to IKS • The basic structure of IKS • 4 Vedas • 4 upvedas • The six vedangas • Itihasa • Dharmashastra • Darshan • Nyaya	The wave of life by Kitz of copra		
2.	8-12	Unit - 2 Modern Science	Introduction, Char. Importance and examples of Modern Science Difference between MS and IKS Role of IKS in modern Science.	HP History and Culture and Economy by Main Grewal Singh and Prof. Dr. C. L. Gupta		
3.	13-17	Unit - 3 Traditional	Traditional Knowledge, definition nature, Char. scope and importance. Indigenous Knowledge, Char. Traditional Knowledge Vs Indigenous Knowledge, Traditional Knowledge Vs Western Knowle- dge, need for protecting traditional Knowledge.	- do -		
4.	18-24	Unit - 4 Yoga and Holistic Health	Meaning and imp. of yoga, yoga and physical health, yoga and psychological health, yoga and intellectual health, yoga and spiritual health, yoga and social approach,	- do -		

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Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
			Introduction to Ashtanga yoga, yogic prayas (Shat Karma) Pranayama and its types active life style and stress management through Yoga Physical fitness, Health & Wellness, components of wellness Traditional sports and Regional games for promoting wellness, Leadership through physical fitness & sports and intro. to first aid.		— do —	
5.	25-28	Unit-5 Himachal Pradesh Basic Information	History, Culture, Heritage/ tradition, Custom and manners Regional knowledge, geographical features, constitutional history. Tourism places and Scope and festivals.		— do —	

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Use additional sheets (if required).