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 33/11 KV & 11kv/440V Distribution substation & write a Report.							
6.	Micro Project :							

Approved/ Not approved

HOD Sign with date 27-01-2026

Principal Signature with date

GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

G P Kangra	Department: Electrical Engg. Subject IS & SEM				
	Course Diploma	Duration 03 year			
SYLLABUS COVERAGE	Total Periods 56	Theory 56 (14×4=56)			

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, stator resistance, auto transformer star-delta, rotor resistance & soft starters. Speed control methods, stator v/s, 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 Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
3.	27-42	Three phase Alternators	Principle, working, merits & startup armatures, Constructional details, parts & their their functions, rotor construction, windings: Single & double layer. Emf equations of alternator with numericals pitch factor & distribution factor. Alternator loading, terminal voltage, Armature resistance & leakage reactance drop. Armature reaction at various power factors & synchronous impedance, Vfg regulation, direct loading & synchronous impedance resistance 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-curve, inverted V-curve, Hunting, Constant excitation (numerical), effect of excitation (numerical), starting methods, Losses in S.M. & efficiency (numerical)			
5.	52-56	FHP motors	Construction & working, SRM, Switched reluctance motor, BLDC, PMSM, Stepper motor, AC & DC. servomotors. Torque speed characteristics, Applications.			

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

* Use additional sheets (if required).

GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

G P Kangra	Department: Electrical Engg. Subject FPE		
	Course Diploma Duration 03 year		
SYLLABUS COVERAGE	Total Periods 56 Theory 56(14×4=56)		

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 prineiple, VI characteristics & uses. Concept of single electron transistor(SET)-aspects of nanotechnology.	Power Electronics by P.S. Bhimra & P.E. circuits devices & application by M. Rashid.		
2.	9–20	Thyristor family devices	➢ SCR construction, two transistor analogy, types, working & Charcteristics. 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-valtage, over current, snubber, crowbar			
3.	21–34	Turn on & Turn off methods of Thyristors	➢ SCR turn on methods: High valtage 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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Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
			SCR turn-off methods: class-A series resonant commutation ckt, class-B shunt resonant commutation class C - complimentary symmetry commutation ckt, class D - Auxillary commutation, class E - external pulse, class F - Line or natural commutation.			
4.	35-48	Phase controlled Rectifiers	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, equation for DC o/p & effect of freewheeling diode. Different configuration of bridge rectifiers: full, half bridge like Common anode & cathodes, SCR in one comm.			
5.	49-56	Industrial Control circuits	Applications: Burglar's alarm system, Battery charger using SCR, Emergency light system, Temperature controller using SCR & illumination / fan speed control TRIAC/SMPS UPS: offline & online, SCR based AC & DC circuit breakers.			

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

* Additional sheets (if required)

GPK-F-17

PLANNED SYLLABUS COVERAGE(Theory)

G P Kangra	Department: EE	Subject BM & MHPP	
	Course Diploma	Duration 03 years	
SYLLABUS COVERAGE	Total Periods 56	Theory 56	

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. Property of liquid solid, gas fuels. Biomass power plants — Jatropha, biodiesel, gobar gas plant. Layout of thermo chemical based power plant layout of Agro chemical based power plant.	Wind Power Technologies — Rachel Sethi	Energy Technology — D.P. Gupta	
2.	12 (13-24)	Unit-II	The basic principle to convert agriculture & forestry products & wood processing and remains into combustible gas, general construction & working of a typical gasifier Power gen. in gas engine. Strengths & limitations of Agriculture & forestry products gasifier. Preventive maintenance steps. Diff. types of biomass gasifiers.			
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.			

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Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
4.	9 (38-46)	Unit-IV	Coconut leaf, sugar cane trash. Gobar gas plant, specifi-cations & maintenance of it. Location of micro hydro power plant energy conservation process, in hydropowerplant and their Classi-fications, General layout of typi-cal micro hydro 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.			

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

additional sheets (if required).

PLANNED SYLLABUS COVERAGE(Theory)

G | Department: AS & H Subject EKIT

Ka gra Course Diploma in EE, ME & IE Duration 3 years

SYI ABUS CO RAGE Total Periods _____ Theory 2/week 28 Theory

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
1.	1-7	Unit - 1 Indian Knowledge System	• Introduction to IKS • The basic structure of IKS • 4 Vedas • 4 upvedas • The six vedagangs • Itihasa • Dhaeamshastra • 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 Goverdhan Singh and Prof. Dr. C.L. Gupta		
3.	13-17	Unit - 3 Traditional	Traditional Knowledge, definition nature, Char scope and importance. Indegineous Knowledge, Char. Traditional Knowledge Vs Indegineous 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—		

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

Sr. No.	Period Nos.	Topic	Details	Instruction Reference	Additional Study Recommended	Remarks
			Introduction to Ashtanga yoga, yogic priyas (Shat Karma) Pranayama and its types active lifestyle 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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Sr. No.	Period No.	Topic Covered	Instruction Reference	Additional Study recommended	Remarks

Approved / Not approved	
Date 27/01/26	HOD Sign
Date 27/01/26	Principal Sign

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