

GANESH INSTITUTE OF ENGINEERING AND TECHNOLOGY, POLYTECHNIC

DEPARTMENT OF ELECTRICAL ENGINEERING

Er. MADHUSMITA SAHOO

LESSON PLAN CUM PROGRESS REPORT – 2025-2026

SUBJECT: RENEWABLE ENERGY				SEMESTER: 6TH			BRANCH: ELECTRICAL ENGINEERING		
LECTURE NO.	CO	BTL	TOPIC TO BE COVERED	BOOK NAME./ CHAPT. NO./ PAGE NO.	WEB REFERENCE IF ANY	TEACHING LEARNING METHOD	PLAN DATE	ACTION DATE	REVIEW BY HOD
1	1	2	INTRODUCTION TO RENEWABLE ENERGY: Environmental consequences of fossil fuel use	RENEWABLE ENERGY SOURCES AND EMERGING TECHNOLOGIES D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page - 4	https://www.youtube.com/watch?v=QV8yG7Cjx98	1-Introduction to RE-5 min 2-Prerequisites for RE- PPT/Smart board-10 min 3-Syllabus & CO discussion-10 min 4-Lecture-35 min	02-01-2026		
2	1	3	Importance of renewable sources of energy	D.P. KOTHARI, K.C SINGAL, Chapter - 1 Page - 6	https://www.youtube.com/watch?v=w17uRm35xk	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	05-01-2026		
3	1	2	Sustainable Design and development	D.P. KOTHARI, K.C SINGAL, Chapter - 1 Page -8	https://www.youtube.com/watch?v=x6qOTNL-bZ0	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	07-01-2026		
4	1	2	Types of RE sources. Limitations of RE sources	D.P. KOTHARI, K.C SINGAL, Chapter - 1 Page -10	https://www.youtube.com/watch?v=A2KvSLoonGs&list=PLm_MSCIsnw8k06QRPPkYDgr91VWPqC89	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	08-01-2026		
5	1	2	Present Indian and International scenario of conventional and RE sources	D.P. KOTHARI, K.C SINGAL, Chapter - 1 Page -13	https://www.youtube.com/watch?v=CnjFW5xaXHY	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	10-01-2026		
6	1	1	Doubt Clearing and Assignment	D.P. KOTHARI, K.C SINGAL, Chapter - 1	https://www.youtube.com/watch?v=kGhJCYmYFMk&t=32s	1-Assignment - 10 min 2- Doubts -20 min 3- Smart Class-30 min	12-01-2026		
7	2	3	SOLAR ENERGY: Solar photovoltaic system-Operating principle	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -18	https://www.youtube.com/watch?v=b617gx1B-qc	1-Introduction to Solar Energy -5 min 2-Smart class -20 min 4-Lecture-35 min	15-01-2026		
8	2	2	Photovoltaic cell concepts	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -20	https://youtu.be/qQYCsvX7jco?si=ufOn2ClqlvB7zyV-	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	16-01-2026		
9	2	2	Cell, module, array, Series connections	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -22	https://www.youtube.com/watch?v=sKB1vLkLZuQ	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	19-01-2026		

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10	2	2	Cell parallel connections	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -24	https://www.youtube.com/watch?v=HWaNf1ufft0	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	20-01-2026		
11	2	4	Maximum power point tracking (MPPT)	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -27	https://youtu.be/iVXzCD3zGEo?si=bY-CP8q1zBh06mGf	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	21-01-2026		
12	2	1	Classification of energy Sources	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -29	https://youtu.be/sFEtnq0EB98?si=AtibN0yjhSowB9OY	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	24-01-2026		
13	2	3	Extra-terrestrial and terrestrial Radiation	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -32	https://youtu.be/t9EQ56QBjxg?si=fyHiiqCnAaqgm4Jy	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	27-01-2026		
14	2	3	Azimuth angle, Zenith angle	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -35	https://youtu.be/hGPKie9QOBI?si=ys5Vm4XwC BUmTfGj	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	28-01-2026		
15	2	3	Hour angle, Irradiance, Solar constant	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -36	https://youtu.be/u9h5WtBfjQc?si=hOJJC1qhPaS sca-Y	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	29-01-2026		
16	2	2	Types of Solar collectors	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -37	https://youtu.be/A9aDFNM-Efc?si=jdj8wl6SJKGfyYrV	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	31-01-2026		
17	2	2	Solar Collectors performance characteristics	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -42	https://youtu.be/fs8-S4w9pTU?si=IYWJ4eE-WKdqhwJ	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	02-02-2026		
18	2	3	Applications: Photovoltaic - battery charger, domestic lighting	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -45	https://youtu.be/42UGwhqu28l?si=rCr_Rk30ZhPferNH	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	04-02-2026		
19	2	3	Applications: Photovoltaic - street lighting, water pumping	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -46	https://youtu.be/x_vW6YnijY?si=drTurQ0HXbF2ItXB	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	05-02-2026		

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20	2	3	Applications: solar cooker, Solar Pond	D.P. KOTHARI, K.C SINGAL, Chapter - 2 Page -47	https://youtu.be/C2FdKQOBfKM?si=j7DwAOhgei9RbV92	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	06-02-2026		
21	2	2	Doubt Clearing and Assignment	D.P. KOTHARI, K.C SINGAL, Chapter - 2	https://www.youtube.com/watch?v=FQXkMt0Zm1A	1-Assignment - 10 min 2- Doubts -20 min 3- Smart Class-30 min	07-02-2026		
22	3	2	WIND ENERGY: Introduction to Wind energy	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page – 51	https://youtu.be/7w6Qj0iDVHE?si=Cb1VVCsi-QXkjSlo	1-Introduction to Wind Energy -5 min 2-Smart class -20 min 4-Lecture-35 min	09-02-2026		
23	3	3	Wind energy conversion	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -53	https://youtu.be/Ac8NMoNvCo?si=hn2EP3SYvknMQFYQ	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	10-02-2026		
24	3	2	Types of wind turbines	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -55	https://youtu.be/eJAWU-Vd6tA?si=LItcb-0VSacmuqwf	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	12-02-2026		
25	3	3	Aerodynamics of wind rotors	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -58	https://youtube.com/playlist?list=PLqJm3zZSka1yC7ioBirLjbdIMHaMp3St&si=2NiBc03Mlcola-Ap	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	13-02-2026		
26	3	4	Wind turbine control systems; conversion to electrical power	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -60	https://youtu.be/OYpoCv4GNcK?si=4YF1zyJS0_mgji2C	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	16-02-2026		
27	3	3	Induction generators	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -62	https://youtu.be/2eTLpzuozLA?si=L0nACIglSNLTTAid	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	17-02-2026		
28	3	3	Synchronous generators	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -63	https://youtu.be/URtjJZ_ufs?si=7MrkIGPtn2bvcl5g	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	18-02-2026		
29	3	3	Grid connected generator operation	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -64	https://youtu.be/-SGLtvEGqtE?si=qQEfhaZmzY02457J	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	20-02-2026		

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30	3	3	Self-excited induction generator operation	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -66	https://youtu.be/8uJhxLdPI58?si=U2WewKtwYzuhU-Jq	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	23-02-2026		
31	3	3	Constant voltage and constant frequency generation with power electronic	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -68	https://youtu.be/dYRJH8EI33U?si=4Ht8T6PAIxhjsKbW	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	25-02-2026		
32	3	2	Single and double output systems	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -70	https://youtu.be/dYRJH8EI33U?si=4Ht8T6PAIxhjsKbW	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	26-02-2026		
33	3	1	Characteristics of wind power plant	D.P. KOTHARI, K.C SINGAL, Chapter - 3 Page -72	https://youtu.be/mbmQAvxX5OM?si=EP2CrpaRi9hWgkW	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	27-02-2026		
34	3	2	Doubt Clearing and Assignment	D.P. KOTHARI, K.C SINGAL, Chapter - 3	https://www.youtube.com/watch?v=vfxX4HMBj6o	1-Assignment - 10 min 2- Doubts -20 min 3- Smart Class- 30 min	28-02-2026		
35	4	2	BIOMASS POWER: Energy from Biomass	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -77	https://youtu.be/Cux0Xwvy0cU?si=wQMUo-ZJC9x5rHJb	1-Introduction to Biomass Power - 5 min 2-Smart class -20 min 4-Lecture-35 min	03-03-2026		
36	4	2	Biomass as Renewable Energy Source	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -78	https://youtu.be/vv43eWy65XU?si=28fo-ukqUeJREYq	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	04-03-2026		
37	4	1	Types of Solid Biomass Fuels	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -80	https://youtube.com/playlist?list=PLgwJf8NK-2e5keK4huMcOMSBBluLBiMhG&si=idDCQceXwKbXN6_C	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	06-03-2026		
38	4	1	Types of Liquid Biomass Fuels	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -82	https://youtube.com/playlist?list=PLgwJf8NK-2e5keK4huMcOMSBBluLBiMhG&si=6Vr7TSkBKPSppJ6G	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	07-03-2026		
39	4	1	Types of Gas Biomass Fuels	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -84	https://youtu.be/IGA7W7m20A?si=tSh9kKxEZAFliRB	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	09-03-2026		

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40	4	2	Combustion	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -86	https://youtu.be/GErmHSZYUes?si=9YkSshIR-lx94VrV	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	10-03-2026		
41	4	2	Fermentation	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -88	https://youtu.be/YbdkbCU20_M?si=6vYm8HQNAxgpehhu	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	12-03-2026		
42	4	3	Anaerobic digestion	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -90	https://youtu.be/hm9SRK22ccg?si=VGKaL7_YLyzwD1m	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	13-03-2026		
43	4	2	Types of biogas digester	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -91	https://youtu.be/1OkUqO86TaM?si=Y6lWdcTXkpCvph-	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	16-03-2026		
44	4	1	Wood gasifier	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -93	https://youtu.be/HVsu0YfZYgM?si=VtD5W3bmnGgglvQ	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	17-03-2026		
45	4		Pyrolysis	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -95	https://youtu.be/3K1zWAYDvMA?si=8E5Anuaz_auit5bd	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	18-03-2026		
46	4	3	Applications: Bio gas	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -97	https://youtu.be/WLIDk4hPKBY?si=GAYS_M7Z_skfSLNg	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	19-03-2026		
47	4	3	Applications: Bio diesel	D.P. KOTHARI, K.C SINGAL, Chapter - 4 Page -99	https://youtu.be/dqz8MPL292k?si=i16KOlavuCjiTpCN	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	20-03-2026		
48	4	2	Doubt Clearing and Assignment	D.P. KOTHARI, K.C SINGAL, Chapter - 4	https://www.youtube.com/watch?v=vv43eWy65XU&t=5s	1-Assignment- 10 min 2- Doubts -20 min 3- Smart Class-30 min	21-03-2026		
49	5	2	OTHER ENERGY SOURCES: Tidal Energy: Energy from the tides	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -104	https://youtu.be/1-2TyKqP84o?si=Gbrqv7DWJR0lqbp4	1-Introduction to other energy sources -5 min 2-Smart class -20 min 4-Lecture-35 min min	23-03-2026		

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50	5	3	Barrage and Non-Barrage Tidal power systems	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -106	https://youtu.be/68re4vwKy8g?si=wFZ-XKeM3Ba0ggS9	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	24-03-2026		
51	5	2	Ocean Thermal Energy Conversion (OTEC)	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -108	https://youtu.be/ggY81DjqOds?si=gaRvZJqiKodfMF9F	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	26-03-2026		
52	5	2	Geothermal Energy – Classification	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -110	https://youtu.be/DhqUwegHj18?si=c-MMHPXDHe TFa6w	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	27-03-2026		
53	5	2	Hybrid Energy Systems	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -112	https://youtu.be/9-DkcpzLpCE?si=tDw8QCMpPm7E8fHa	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	28-03-2026		
54	5	1	Need for Hybrid Systems	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -113	https://youtu.be/JSTDFJXAdNM?si=bd7L9tSZy7cDDU99	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10 min	30-03-2026		
55	5	2	Diesel-PV	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -114	https://youtu.be/uu346CdEhaw?si=yTBwP8frdAUEx_h	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10min	31-03-2026		
56	5	2	Wind-PV	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -115	https://youtu.be/9Y8ccGsJQTM?si=Yz7f9Vu8tElwDALv	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10min	02-04-2026		
57	5	2	Microhydel-PV	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -116	https://youtu.be/GBuVApbmum8?si=H0qz9I43ii6Fmz0S	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10min	03-04-2026		
58	5	2	Electric vehicles	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -118	https://youtu.be/GHGXY_sjbgQ?si=781Yoy59ROnyXM5O	1-Previous class topic Review-5 min 2-Lecture-45 min 3-Doubts 10min	06-04-2026		

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59	5	2	Hybrid electric vehicles	D.P. KOTHARI, K.C SINGAL, Chapter - 5 Page -120	https://youtu.be/h5ysddrXLw?si=1m4viflcyfOsjvMA	1-Previous class topic Review-5 min 2-Lecture-45 min Doubts-10min	08-04-2026		
60	5	2	Doubt Clearing and Assignment	D.P. KOTHARI, K.C SINGAL, Chapter - 5	https://www.youtube.com/watch?v=kYCRO-yfRvc	1- Assignment - 10 min 2- Doubts -20 min 3- Smart Class- 30 min	10-04-2026		

Principal

Faculty

HoD, Electrical Engineering