



**CHAITANYA BHARATHI
INSTITUTE OF TECHNOLOGY (A)**

Kokapet (Village), Gandipet, Hyderabad, Telangana-500075. www.cb.it.ac.in



COMMITTED TO
RESEARCH,
INNOVATION AND
EDUCATION

43
years

Department of Electrical & Electronics Engineering

COURSES IDENTIFIED FOR MINORS DEGREE 2021-2022(July-December)

Additional Minor Engineering Degree in

I. Electric Vehicles

II. Sustainable Energy

III. Renewable Energy

The lists of subjects approved for Electrical & Electronics Engg. Department AY: 2021-22

List of Swayam /NPTEL courses for the award of Minor Engineering in Electric Vehicles:

B.E: MINOR ENGINEERING -ELECTRIC VEHICLES

Sl. No.	Course Code	Title of the Course	Credits	Registration link
1	21EE M01	Electric Vehicles and Mobility	2	https://www.coursera.org/learn/electric-vehicles-mobility
2	21EE M02	Introduction to battery-management systems	2	https://www.coursera.org/learn/battery-management-systems
3	21EE M03	Equivalent Circuit Cell Model Simulation	3	https://www.coursera.org/learn/equivalent-circuit-cell-model-simulation
4	21EE M04	Battery State-of-Charge (SOC) Estimation	3	https://www.coursera.org/learn/battery-state-of-charge
5	21EE M05	Battery State-of-Health (SOH) Estimation	3	https://www.coursera.org/learn/battery-state-of-health
6	21EE M06	Battery Pack Balancing and Power Estimation	3	https://www.coursera.org/learn/battery-pack-balancing-power-estimation
7	21EE M07	Renewable Energy and Green Building Entrepreneurship	3	https://www.coursera.org/learn/renewable-energy-entrepreneurship

8	21EE M08	Our Energy Future	3	https://www.coursera.org/learn/future-of-energy
9	21EE M09	Introduction to Power Electronics	3	https://www.coursera.org/learn/power-electronics
10	21EE M10	State Estimation and Localization for Self-Driving Cars	3	https://www.coursera.org/learn/state-estimation-localization-self-driving-cars
11	21EE M11	Discrete Optimization	3	https://www.coursera.org/learn/discrete-optimization
12	21EE M12	Remote Sensing Image Acquisition, Analysis and Applications	3	https://www.coursera.org/learn/remote-sensing
13	21EE M13	IoT Communications	3	https://www.coursera.org/learn/iot-communications
14	21EE M14	Embedding Sensors and Motors Specialization	3	https://www.coursera.org/specializations/embedding-sensors-motors
15	21EE M15	Introduction to Self-Driving Cars	3	https://www.coursera.org/learn/intro-self-driving-cars
16	21EE M16	Urbanization and Environment	2	https://onlinecourses.nptel.ac.in/noc21_hs96/preview
17	21EE M17	Sustainable Transportation systems	3	https://onlinecourses.nptel.ac.in/noc21_ce74/preview
18	21EE M18	Solar Photovoltaics Fundamentals, Technology And Applications	2	https://onlinecourses.nptel.ac.in/noc21_ph25/preview
19	21EE M19	Solar Energy Engineering and Technology	3	https://onlinecourses.nptel.ac.in/noc21_ge23/preview
20	21EE M20	Principles of Electrical Sciences	3	https://onlinecourses.swayam2.ac.in/nou21_ee02/preview
21	21EE M21	Challenges to Sustainable Development	3	https://onlinecourses.swayam2.ac.in/nou21_ee02/preview
22	21EE M22	Introduction to Smart Grid	2	https://onlinecourses.nptel.ac.in/noc21_ee68/preview
23	21EE M23	Introduction to Semiconductor Devices	3	https://onlinecourses.nptel.ac.in/noc21_ee59/preview
24	21EE M24	Introduction to Industry 4.0 and Industrial Internet of Things	2	https://onlinecourses.nptel.ac.in/noc21_cs66/preview
25	21EE M25	Innovation and Start-up Policy	2	https://onlinecourses.swayam2.ac.in/imb21_mg40/preview

26	21EE M26	Fundamentals of Electrical Engineering	3	https://onlinecourses.nptel.ac.in/noc21_ee73/preview
27	21EE M27	Energy Resources and Conversion Processes	3	https://onlinecourses.swayam2.ac.in/nou21_me03/preview
28	21EE M28	Ethics in Engineering Practice	2	https://onlinecourses.nptel.ac.in/noc21_mg60/preview
29	21EE M29	Electricity & Safety Measures	3	https://onlinecourses.swayam2.ac.in/nou21_ee01/preview
30	21EE M30	Design of photovoltaic systems	3	https://onlinecourses.nptel.ac.in/noc21_ee62/preview
31	21EE M31	Dc Microgrid and Control System	2	https://onlinecourses.nptel.ac.in/noc21_ee96/preview
32	21EE M32	Control engineering	3	https://onlinecourses.nptel.ac.in/noc21_ee67/preview
33	21EE M33	Basic Electrical Circuits	3	https://onlinecourses.nptel.ac.in/noc21_ee99/preview

Upcoming NPTEL/SWAYAM Courses in ODD EVEN SEMESTER

34	21EE M34	Fundamental of Power Electronics	3	https://onlinecourses.nptel.ac.in/noc22_ee03/preview
35	21EE M35	Electrical Machines - II	3	https://onlinecourses.nptel.ac.in/noc22_ee06/preview
36	21EE M36	Network Analysis	3	https://onlinecourses.nptel.ac.in/noc22_ee07/preview
37	21EE M37	Microprocessors And Microcontrollers	3	https://onlinecourses.nptel.ac.in/noc22_ee12/preview
38	21EE M38	High Power Multilevel Converters - Analysis, design and operational issues	3	https://onlinecourses.nptel.ac.in/noc22_ee16/preview
39	21EE M39	Design of Power Electronic Converters	2	https://onlinecourses.nptel.ac.in/noc22_ee33/preview
40	21EE M40	Electric Vehicles - Part 1	1	https://onlinecourses.nptel.ac.in/noc22_ee53/preview
41	21EE M41	Non-conventional energy Resources	3	https://onlinecourses.nptel.ac.in/noc22_ge14/preview

B.E: MINOR ENGINEERING-SUSTAINABLE ENERGY

Sl. No.	Course Code	Title of the Course	Credits	No. of Hours/Weeks	Registration link
1	21EE M01	Introduction to battery-management systems	2	(21 hours)	https://www.coursera.org/learn/battery-management-systems

2	21EE M02	Renewable Energy and Green Building Entrepreneurship	3	(18 hours 29 min)	https://www.coursera.org/learn/renewable-energy-entrepreneurship
3	21EE M03	Urbanization and Environment	2	(8 weeks)	https://onlinecourses.nptel.ac.in/noc21_hs96/preview
4	21EE M04	Sustainable Transportation systems	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc21_ce74/preview
5	21EE M05	Solar Photovoltaics Fundamentals, Technology And Applications	2	(8 weeks)	https://onlinecourses.nptel.ac.in/noc21_ph25/preview
6	21EE M06	Solar Energy Engineering and Technology	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc21_ge23/preview
7	21EE M07	Principles of Electrical Sciences	3	(12 weeks)	https://onlinecourses.swayam2.ac.in/nou21_ee02/preview
8	21EE M08	Challenges to Sustainable Development	3	12 weeks	https://onlinecourses.swayam2.ac.in/nou21_ge14/preview
9	21EE M09	Solar Energy and Electrical System Design	2	(16 hours)	https://www.coursera.org/learn/solar-energy-and-electrical-system-design#syllabus
10	21EE M10	Wind Energy	2	(28 hours)	https://www.coursera.org/learn/wind-energy
11	21EE M11	Electric Power Systems	2	(12 hours)	https://www.coursera.org/learn/electric-power-systems?specialization=energy-industry#syllabus
12	21EE M12	Power Electronics (Converter circuits)	2	(19 hours)	https://www.coursera.org/learn/converter-circuits?specialization=power-electronics#syllabus
13	21EE M13	Sustainable and Renewable Energy	2	9 sections, 9 lectures, 1h 54m	https://www.udemy.com/course/sustainable-and-renewable-energy/
14	21EE M14	Natural Resources for Sustainable Development	3	12 Weeks, 4–6 hours per week	https://www.edx.org/course/natural-resources-for-sustainable-development?index=product&queryID=c9da3719791b0aed933f7d49e2a53288&position=12
15	21EE M15	Sustainable Energy: Design a Renewable Future	2	9 Weeks, 6–8 hours per week	https://www.edx.org/course/sustainable-energy-design-a-renewable-future?index=product&queryID=c9da3719791b0aed933f7d49e2a53288&position=4
16	21EE M16	Incorporating Renewable Energy in Electricity Grids	2	(6 Weeks, 2–5 hours per week)	https://www.edx.org/course/incorporating-renewable-energy-in-electricity-grid?index=product&queryID=c9da3719791b0aed933f7d49e2a53288&position=1

17	21EE M17	Green Hydrogen Fundamentals: A Renewable Energy Course	2	(5 sections, 12 lectures, 2h 2m)	https://www.udemy.com/course/green-hydrogen-fundamentals-a-renewable-energy-course/
18	21EE M18	Renewable Energy Masterclass - A Complete Guide To Renewable	2	(8 sections, 51 lectures, 5h 13m)	https://www.udemy.com/course/renewable-energy-masterclass-a-complete-guide-to-renewable/
19	21EE M19	Energy Markets of Today	2	(5 Weeks, 4–6 hours per week)	https://www.edx.org/course/the-energy-transition-part-1-the-european-energy-m?index=product&queryID=de51760549cba1263c2d53b73e32ecf0&position=12
20	21EE M20	Optimal Sizing of Hybrid Renewable Energy Systems with Homer	3	(9 sections, 16 lectures, 2h 28m)	https://www.udemy.com/course/optimal-sizing-of-hybrid-renewable-energy-systems-with-homer/
21	21EE M21	Micro-Renewable energy for Beginners	2	(6 sections, 9 lectures, 2h 4m)	https://www.udemy.com/course/micro-renewable-energy/
22	21EE M22	Renewable Energy: Practical Introduction to Biogas and AD	3	(6 sections, 24 lectures, 2h 18m)	https://www.udemy.com/course/renewable-energy-practical-introduction-to-biogas-and-ad/
23	21EE M23	Blockchain Energy & Utilities	2	(4 sections, 22 lectures, 1h 55m)	https://www.udemy.com/course/blockchain-energy-utilities/
24	21EE M24	Planning Hybrid Photovoltaic-Diesel Energy Systems	2	(7 sections, 19 lectures, 59m)	https://www.udemy.com/course/hybrid-pv-diesel-systems/
25	21EE M25	Introduction to Power Electronics (Power Electronics)	2	(12 hours)	https://www.coursera.org/learn/power-electronics#syllabus
26	21EE M26	Electricity & Safety Measures	4	(12 weeks)	https://onlinecourses.swayam2.ac.in/nou21_ee01/preview
27	21EE M27	Dc Microgrid and Control System	3	(8 weeks)	https://onlinecourses.nptel.ac.in/noc21_ee96/preview
28	21EE M28	Fundamental of Power Electronics	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee03/preview
29	21EE M29	High Power Multilevel Converters - Analysis, design and operational issues	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee16/preview
30	21EE M30	Design of Power Electronic Converters	2	(8 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee33/preview

31	21EE M31	Non-conventional energy Resources	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ge14/preview
32	21EE M32	Network Analysis	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee07/preview
33	21EE M33	Microprocessors And Microcontrollers	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee12/preview

B.E.MINOR ENGINEERING -RENEWABLE ENERGY

Sl. No.	Course Code	Title of the Course	Credits	No. of Hours/Weeks	Registration link
1	21EE M01	Introduction to battery-management systems	2	(21 hours)	https://www.coursera.org/learn/battery-management-systems
2	21EE M02	Renewable Energy and Green Building Entrepreneurship	3	(18 hours 29 min)	https://www.coursera.org/learn/renewable-energy-entrepreneurship
3	21EE M03	Solar Photovoltaics Fundamentals, Technology And Applications	2	(8 weeks)	https://onlinecourses.nptel.ac.in/noc21_ph25/preview
4	21EE M04	Solar Energy Engineering and Technology	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc21_ge23/preview
5	21EE M05	Principles of Electrical Sciences	3	(12 weeks)	https://onlinecourses.swayam2.ac.in/nou21_ee02/preview
6	21EE M06	Design of photovoltaic systems	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc21_ee62/preview
7	21EE M07	Solar Energy and Electrical System Design	2	(16 hours)	https://www.coursera.org/learn/solar-energy-and-electrical-system-design#syllabus
8	21EE M08	Wind Energy	2	(28 hours)	https://www.coursera.org/learn/wind-energy
9	21EE M09	Electric Power Systems	2	(12 hours)	https://www.coursera.org/learn/electric-power-systems?specialization=energy-industry#syllabus
10	21EE M10	Power Electronics (Converter circuits)	2	(19 hours)	https://www.coursera.org/learn/converter-circuits?specialization=power-electronics#syllabus
11	21EE M11	Green Hydrogen Fundamentals: A Renewable Energy Course	2	(5 sections, 12 lectures, 2h 2m)	https://www.udemy.com/course/green-hydrogen-fundamentals-a-renewable-energy-course/

12	21EE M12	Renewable Energy Masterclass - A Complete Guide To Renewable	2	(8 sections, 51 lectures, 5h 13m)	https://www.udemy.com/course/renewable-energy-masterclass-a-complete-guide-to-renewable/
13	21EE M13	Incorporating Renewable Energy in Electricity Grids	2	(6 Weeks, 2–5 hours per week)	https://www.edx.org/course/incorporating-renewable-energy-in-electricity-grid?index=product&queryID=c9da3719791b0aed933f7d49e2a53288&position=1
14	21EE M14	Energy Markets of Today	2	(5 Weeks, 4–6 hours per week)	https://www.edx.org/course/the-energy-transition-part-1-the-european-energy-m?index=product&queryID=de51760549cba1263c2d53b73e32ecf0&position=12
15	21EE M15	Optimal Sizing of Hybrid Renewable Energy Systems with Homer	3	(9 sections, 16 lectures, 2h 28m)	https://www.udemy.com/course/optimal-sizing-of-hybrid-renewable-energy-systems-with-homer/
16	21EE M16	Micro-Renewable energy for Beginners	2	(6 sections, 9 lectures, 2h 4m)	https://www.udemy.com/course/micro-renewable-energy/
17	21EE M17	Renewable Energy: Practical Introduction to Biogas and AD	3	(6 sections, 24 lectures, 2h 18m)	https://www.udemy.com/course/renewable-energy-practical-introduction-to-biogas-and-ad/
18	21EE M18	Blockchain Energy & Utilities	2	(4 sections, 22 lectures, 1h 55m)	https://www.udemy.com/course/blockchain-energy-utilities/
19	21EE M19	Planning Hybrid Photovoltaic-Diesel Energy Systems	2	(7 sections, 19 lectures, 59m)	https://www.udemy.com/course/hybrid-pv-diesel-systems/
20	21EE M20	Introduction to Power Electronics (Power Electronics)	2	(12 hours)	https://www.coursera.org/learn/power-electronics#syllabus
21	21EE M21	Electricity & Safety Measures	4	(12 weeks)	https://onlinecourses.swayam2.ac.in/nou21_ee01/preview
22	21EE M22	Dc Microgrid and Control System	3	(8 weeks)	https://onlinecourses.nptel.ac.in/noc21_ee96/preview
23	21EE M23	Solar Energy System Design	2	(12 hours)	https://www.coursera.org/learn/solar-energy-system-design#syllabus
24	21EE M24	Fundamental of Power Electronics	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee03/preview
25	21EE M25	High Power Multilevel Converters - Analysis, design and operational issues	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee16/preview

26	21EE M26	Design of Power Electronic Converters	2	(8 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee33/preview
27	21EE M27	Non-conventional energy Resources	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ge14/preview
28	21EE M28	Network Analysis	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee07/preview
29	21EE M29	Microprocessors And Microcontrollers	3	(12 weeks)	https://onlinecourses.nptel.ac.in/noc22_ee12/preview



Head, Dept. of E.E.E.