



# Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

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## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

### Y21 B.Tech EEE- category wise Credits

Sl No	Course Category	Short Name	#courses	Minimum Credits	Contact Hours
1	Humanities & Social Sciences	HSS	12	12	36
2	Basic Sciences	BS	8	23.5	33
3	Engineering Sciences	ES	8	29.5	47
4	Professional Core	PC	11	44	53
5	Flexi Core	FC	1	3	3
6	Professional Electives	PE	5	15	15
7	Project Courses	PR	10	19	72
8	Open Electives	OE	5	14	14
		Total	60	160	273

### CIRRICULUM

SL	Category	Course Code	Course Title	L	T	P	S	Cr	CH	Pre-requisite
1	HSS	20UC1101	Integrated Professional English	0	0	4	0	2	4	Nil
2	HSS	20UC1202	English Proficiency	0	0	4	0	2	4	Nil
3	HSS	21UC2103	Essential Skills for Employability	0	0	4	0	2	4	Nil
4	HSS	21UC2204	Corporate Readiness Skills	0	0	4	0	2	4	Nil
5	HSS	21UC0010	Universal Human Values & Professional Ethics	2	0	0	0	2	2	Nil
6	HSS- Audit	20UC0007	Indian Heritage and Culture	2	0	0	0	0	2	Nil
7	HSS	20UC0008	Indian Constitution	2	0	0	0	0	2	Nil
8	HSS	20UC0009	Ecology & Environment	2	0	0	0	0	2	Nil
9	HSS	21UC0011	Gender Sensitization	2	0	0	0	2	2	Nil
10	HSS	21UC0012	Innovation Management	2	0	0	0	0	2	
11	HSS- Audit	UC0014	Activity Based Learning	0	0	4	0	0	4	
12	HSS- Audit	UC0015	Social Work	0	0	4	0	0	4	
13	BS	20MT1101	Mathematics for Computing	2	2	0	2	4.5	6	Nil
14	BS	21MT2102	Mathematics for Engineers	2	1	0	0	3	3	Nil
15	BS	20EE2104	Mathematical Transforms for Signal Processing	2	1	0	0	3	3	Nil
16	BS	21UC1203	Design Thinking and Innovation	0	0	4	0	2	4	Nil
17	BS	21PH1008	(Science Elective - I) Physics for Electronic Engineering	3	0	2	0	4	5	Nil
18	BS	21EE2103	(Science Elective - II) Electromagnetic Fields and Engineering Materials	3	1	0	0	4	4	
19	BS	21UC3105	Problem Solving Skills-I	0	0	2	2	1.5	4	Nil
20	BS	21UC3206	Problem Solving Skills-II	0	0	2	2	1.5	4	Nil

21	ES	21SC1101	Computational Thinking for Structured Design	3	0	2	6	5.5	11	Nil
22	ES	20ME1103	Design Tools Workshop – I	0	0	4	0	2	4	Nil
23	ES	21SC1209	Design Tools Workshop – II	0	0	4	0	2	4	Nil
24	ES	21SC1202	Data Structures	3	0	2	4	5	9	20SC1101
25	ES	21EC1202	Computer Organization & Architecture	2	0	0	0	2	2	NIL
26	ES	20EE1201	Basic Electrical and Electronics Engineering	3	1	2	0	5	6	Nil
27	ES	20SC2103	Object Oriented Programming	2	0	4	0	4	6	Nil
28	ES	20EC1101	Digital Logic & Processors	3	0	2	0	4	5	Nil
29	PC	21EE2203	Electrical Power Generation, Transmission and Distribution	3	0	0	0	3	3	Nil
30	PC	21EE2101	Electrical Circuits	3	0	2	0	4	5	Nil
31	PC	21EE2102	Electrical Machines	3	0	2	0	4	5	Nil
32	PC	21EE2201	Analog Electronics	3	1	2	0	5	6	Nil
33	PC	21EE3103	Power System Analysis & Stability	3	1	0	0	4	4	Nil
34	PC	21EE2202	Industrial Applications of Electrical Machines	3	0	2	0	4	5	21EE2102
35	PC	21EE2204	Power Electronics	3	0	2	0	4	5	21EE2101
36	PC	21EE3101	Control Systems	3	0	2	0	4	5	Nil
37	PC	21EE3202	Power System Protection and Control	3	0	2	0	4	5	Nil
38	PC	21EE3104	AI Techniques for Electrical Engineering	3	0	2	0	4	5	Nil
39	PC	21EE3201	Embedded Controllers & Applications	3	0	2	0	4	5	Nil
40	FC	21EE3102	Measurements and Instrumentation	3	0	0	0	3	3	Nil
41	PE	PE-1	Professional Elective – 1	3	0	0	0	3	3	-
42	PE	PE-2	Professional Elective – 2	3	0	0	0	3	3	-
43	PE	PE-3	Professional Elective – 3	3	0	0	0	3	3	-
44	PE	PE-4	Professional Elective – 4	3	0	0	0	3	3	-
45	PE	PE-5	Professional Elective – 5	3	0	0	0	3	3	-
46	OE	OE	Open Elective – 1	3	0	0	0	3	3	Nil
47	OE	OE	Open Elective – 2	3	0	0	0	3	3	Nil
48	OE	OE	Open Elective – 3	3	0	0	0	3	3	Nil
49	OE	OE	Management Elective(OE-4)	3	0	0	0	3	3	Nil
50	OE	OE	Foreign Language Elective(OE-5)	2	0	0	0	2	2	Nil
51	PR	21E2040	Social Internship	0	0	0	4	1	4	Nil
52	PR	21E3041	Technical Internship	0	0	0	4	1	4	Nil
53	PR	21E4042	Industry Internship	0	0	0	4	1	4	Nil
54	PR	21E2046	Project Based Learning -1	0	0	0	6	1.5	6	Nil
55	PR	21E2047	Project based learning -2	0	0	0	6	1.5	6	Nil
56	PR	21E3043	Term paper	0	0	0	4	1	4	Nil
57	PR	21E3044	Midgrade Capstone Project – I	0	0	2	4	2	6	Nil
58	PR	21E3045	Midgrade Capstone Project – II	0	0	2	4	2	6	Nil
59	PR	21E4048/21E4051/ 21E4050	Project / Internship -1/Practice School	0	0	0	16	4	16	Nil
60	PR	21E4049/21E4052/ 21E4050	Project / Internship 2/Practice School	0	0	0	16	4	16	Nil
							Total Credits	160.00		

**PROFESSIONAL ELECTIVES**

Course Code	Course Title	L	T	P	S	Cr	CH	Pre-requisite	Specialization
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PE-1	21EE3131	DISTRIBUTION SYSTEM PRACTICES	3	0	0	0	3	3	21EE2203	Smart Grid Technologies
PE-2	21EE3132	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	3	0	0	0	3	3	Nil	
PE-3	21EE3133	ENERGY MANAGEMENT SYSTEMS AND SCADA	3	0	0	0	3	3	Nil	
PE-4	21EE3231	SMART GRID COMMUNICATION AND CYBERSECURITY	3	0	0	0	3	3	Nil	
PE-5	21EE3232	INTERNET OF THINGS AND SMART GRID ANALYTICS	3	0	0	0	3	3	Nil	
PE-1	21EE3121	SOLAR PV AND MICRO ENERGY TECHNOLOGIES	3	0	0	0	3	3	Nil	Green Energy Technologies
PE-2	21EE3122	WIND AND ENERGY STORAGE TECHNOLOGIES	3	0	0	0	3	3	Nil	
PE-3	20EE3123	ENERGY MANAGEMENT AND GREEN BUILDINGS	3	0	0	0	3	3	Nil	
PE-4	20EE3221	AI AND IOT FOR GREEN ENERGY INTEGRATION	3	0	0	0	3	3	Nil	
PE-5	20EE3222	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	3	0	0	0	3	3	Nil	
PE-1	21EE3141	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	3	0	0	0	3	3	Nil	Electric Vehicle Technology
PE-2	21EE3142	BATTERY STATE ESTIMATION ALGORITHMS FOR ELECTRIC VEHICLE	3	0	0	0	3	3	Nil	
PE-3	21EE3143	CHARGING STATIONS FOR ELECTRIC VEHICLES	3	0	0	0	3	3	21EE2204	
PE-4	20EE3241	AI AND IOT FOR ELECTRIC VEHICLE	3	0	0	0	3	3	Nil	
PE-5	20EE3242	COMMUNICATION PROTOCOLS & TESTING OF ELECTRIC VEHICLE	3	0	0	0	3	3	Nil	
PE-1	21EE3111	INDUSTRIAL AUTOMATION AND ROBOTICS	3	0	0	0	3	3	Nil	Industrial Automation
PE-2	21EE3112	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	3	0	0	0	3	3	Nil	
PE-3	21EE3113	INDUSTRIAL DRIVES AND CONTROL	3	0	0	0	3	3	Nil	
PE-4	21EE3211	INDUSTRIAL COMMUNICATION PROTOCOLS AND CYBER SECURITY	3	0	0	0	3	3	Nil	
PE-5	21EE3212	SMART SENSORS AND SENSOR NETWORKING	3	0	0	0	3	3	Nil	

OPEN ELECTIVES										
OE-1	OEEE0013	RENEWABLE ENERGY RESOURCES	3	0	0	0	3	0	NIL	
OE-2	OEEE0014	ENERGY ESTIMATION AND AUDIT	3	0	0	0	3	0	NIL	
FOREGIN LANGUAGE										
FC	20FL3058M	JAPANESE LANGUAGE	2	0	0	0	2	2	Nil	
	20FL3062M	SPANISH LANGUAGE	2	0	0	0	2	2	Nil	
	20FL3054	FRENCH LANGUAGE	2	0	0	0	2	2	Nil	
	20FL3055	GERMAN LANGUAGE	2	0	0	0	2	2	Nil	