ANNEXURE- ID

Faculty of Engineering, School of Electrical, Electronics & Communication Engineering
Department of Electrical Engineering
Degree: B. Tech. (Hons) Electrical & Computer Engineering

Total Credit: 178 (160 + 18*)

	Third Semester						**Fourth Semester**				
Code	**Subject Name**	**L**	**T**	**P**	**C**	**Code**	**Subject Name**	**L**	**T**	**P**	**C**
MAS21XX	Statistics & Probability	3	0	0	3	MEE22XX	Engineering Economics	3	0	0	3
MBB21XX	Management of Technology	3	0	0	3	ELC2201	Networks & Systems	3	1	0	4
ELC2101	Analog & Digital Systems	3	1	0	4	ELC2202	Data Base Management Systems	3	1	0	4
ELC2102	Data Structures & Algorithms	3	1	0	4	ELC2220/ ELC2221	Object Oriented Programming/ Microcontroller based Systems Design	3	1	0	4
ELC2103	Computer Organization & Architecture	3	1	0	4	ELC22XX	Program Elective 1	3	0	0	3
ELC2120/ ELC2121	Electrical Vehicle Technology/ Computer Networks	3	1	0	4	ELC00XX	Open Elective 1	3	0	0	3
ELC2130	Data Structures & Algorithms Lab	0	0	2	1	ELC2230	Data Base Management Systems Lab	0	0	2	1
ELC2131	Analog & Digital Systems Lab	0	0	2	1	ELC2231	Microcontroller Lab	0	0	2	1
ELC2170	Project-based Learning 1	0	0	2	1	ELC2270	Project-based Learning 2	0	0	2	1
		18	4	6	25			18	3	6	24
	Total Contact Hours (L+T+P)	**28**					**Total Contact Hours (L+T+P)**	**27**			
	Fifth Semester						**Sixth Semester**				
Code	**Subject Name**	**L**	**T**	**P**	**C**	**Code**	**Subject Name**	**L**	**T**	**P**	**C**
ELC3101	Power Electronics	3	1	0	4	EEE3201	Control Systems	3	1	0	4
ELC3102	Smart Energy Systems	3	1	0	4	ELC32XX	Program Elective 4	3	0	0	3
ELC3120/ ELC3121	Renewable Energy / Operating Systems	3	1	0	4	ELC32XX	Program Elective 5	3	0	0	3
ELC31XX	Program Elective 2	3	0	0	3	ELC32XX	Program Elective 6	3	0	0	3
ELC31XX	Program Elective 3	3	0	0	3	ELC00XX	Open Elective 3	3	0	0	3
ELC00XX	Open Elective 2	3	0	0	3	ELC3230	Professional Practice	0	0	2	1
ELC3130	Power Electronics Lab	0	0	2	1	ELC3231	Control & Automation Lab	0	0	2	1
ELC3131	Energy Systems Lab	0	0	2	1	ELC3232	Advance Systems Simulation Lab	0	0	2	1
ELC3170	Project-based Learning 3	0	0	2	1	ELC3270	Project-based Learning 4	0	0	6	3

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ELC3180	Research Methodology	1	0	0	1	ELC3280	Electric vehicles: Technology & Economics	3	0	0	3
		19	3	6	24			18	1	12	22
	Total Contact Hours (L+T+P)	**28**					**Total Contact Hours (L+T+P)**	**31**			
	Seventh Semester						**Eighth Semester**				
Code	**Subject Name**	**L**	**T**	**P**	**C**	**Code**	**Subject Name**	**L**	**T**	**P**	**C**
ELC41XX	Program Elective 7	3	0	0	3	ELC4270	Major Project	0	0	24	12
ELC41XX	Program Elective 8	3	0	0	3	ELC4280	Honors Project	0	0	16	8
ELC00XX	Open Elective 4	3	0	0	3						
ELC00XX	Open Elective 5	3	0	0	3						
ELC4170	Internship (Industry or Research)	0	0	2	1						
ELC4180	Charging Technologies for Electric Vehicle	3	0	0	3						
ELC4181	Electric Vehicle Motors	3	0	0	3						
		18	0	2	19			0	0	40	20
	Total Contact Hours (L+T+P)	**20**					**Total Contact Hours (L+T+P)**	**40**			

Flexi Core		
Flexi Core 1 (III Sem)	**Flexi Core 2 (IV Sem)**	**Flexi Core 3 (V Sem)**
ELC2120: Electrical Vehicle Technology **ELC2121:** Computer Networks	**ELC2220:** Object Oriented Programming **ELC2221:** Microcontroller based Systems Design	**ELC3120:** Renewable Energy **ELC3121:** Operating Systems

Program Electives			
IV Sem	**V Sem**	**VI Sem**	**VII Sem**
Example - PE1 • **ELC2240:** Solar Photovoltaic systems • **ELC2241:** Generation, Transmission & Distribution • **ELC2242:** Graph Theory & Applications	**Example - PE2** • **ELC3140:** Engineering Systems Modelling • **ELC3141:** Soft Computing Techniques • **ELC3142:** Internet of Things **Example - PE3** • **ELC3143:** Software Engineering	**Example - PE 4** • **ELC3240:** Data Analytics • **ELC3241:** Sensor & Actuator • **ELC3242:** Fundamentals of Semiconductor Devices **Example - PE5**	**Example - PE 7** • **ELC4140:** Cloud Computing • **ELC4141:** Energy Markets & Operations • **ELC4142:** VLSI Design & Applications **Example - PE8**

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	• **ELC3144:** Fuzzy Logic and Neural Network • **ELC3145:** Digital Signal Processing	• **ELC3243:** AI and Machine Learning • **ELC3244:** Introduction to Blockchain • **ELC3245:** Industrial Automation **Example - PE6** • **ELC3246:** Modern Optimization Techniques • **ELC3247:** Microgrid Technology • **ELC3248:** Forecasting Methods and Applications	• **ELC4143:** Web Technology • **ELC4144:** Cyber Physical Systems • **ELC4145:** Energy Audit and Management

Open Electives	
Graded OE	**Non-Graded OE**
OE1 ELC0001: Fundamentals of Electric Vehicle **OE2 ELC0002:** Fundamentals of Solar PV Systems **OE3 ELC0003:** Battery Management Systems **OE4 ELC0004:** Renewable Energy Systems **OE5 ELC0005:** Energy Auditing & Management	OE1 ELC0051: Course Name OE2 ELC0052: Course Name OE3 ELC0052: Course Name OE4 ELC0052: Course Name OE5 ELC0052: Course Name

Courses for Hons. with specialization Electric Vehicle
V Sem
ELC 3180: Research Methodology
VI / VII Sem
ELC3280: Electric vehicles: Technology & Economics **ELC4180:** Charging Technologies for Electric Vehicle **ELC4181:** Electric Vehicle Motors
VIII Sem
ELC 4280: Honors Project