

JSPM University Pune

Faculty of Science and Technology

School of Electrical and Communication Sciences



NEP aligned Structure

for

M. Tech (Electrical Engineering)

(AY: 2025-26 and AY: 2026-27:)



JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF ELECTRICAL AND COMMUNICATION SCIENCES

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2025-2026

RELEASE DATE

01/07/2025

MASTER OF TECHNOLOGY (POWER ELECTRONICS AND DRIVES)

REVISION NO.

0.0 (NEP)

SEMESTER I (LEVEL 6.5)

COURSE		TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										C R E D I T S
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)		T O T A L	
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PSMC	230GMAM02_01	Advanced Numerical Methods	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	250GPEM01_01	Analysis of Power Converters	2	-	-	-	30	30	40	50	-	-	-	-	50	2
PCC	250GPEM02_01	Modeling and Analysis of Electric Drives	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
PCC	250GPEM03_01	Modern Control Theory	3	-	-	-	30	30	40	100	-	-	-	-	100	2.5
MMC	---	Multidisciplinary Minors Course	1	-	2	-	-	-	-	-	-	-	-	-	100	3
SEC	240GCSM05_01	Advanced Python Programming	2	-	2	-	-	-	-	-	50	50	50	50	100	2
VSC	230IDCB01_01	Design Thinking and Creativity	1	-	-	2	-	-	-	-	50	50	50	50	100	3
AEC	231UENM01_01	Communicative English for Professionals	1	-	2	-	-	-	-	-	50	50	50	50	50	1.5
RMC	230IRMM01_01	Research Methodology	2	-	-	-	30	30	40	50	-	-	-	-	50	2
LC	250GPEM04_01	Analysis of Power Converters Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	2
TOTAL			16	1	8	4									750	22

L-Lecture
Format No.: JSPMUni/ACAD/001

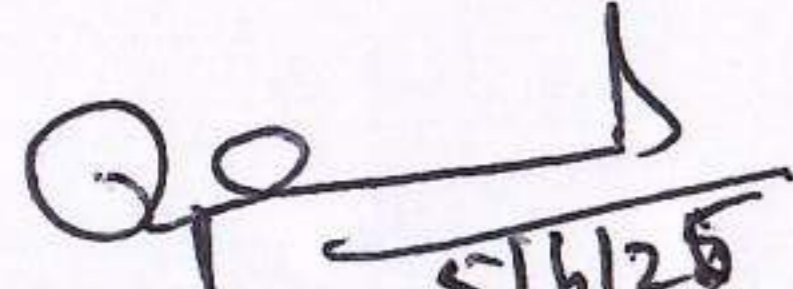
T-Tutorial
Rev. No.:0.0

P-Practical Session (Laboratory)
Rev. Date: 01/07/2025



EL-Experiential Learning

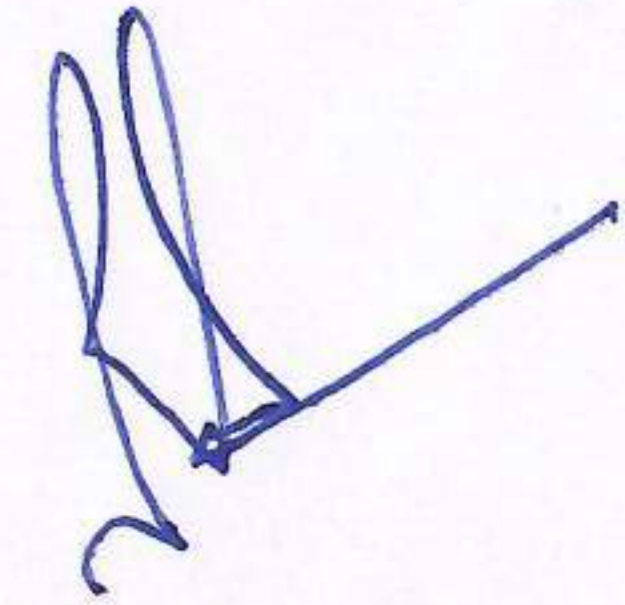
Sem.	Multidisciplinary Minors Course (MMC)			
I	Course Code	230GRAM24_01	230GCSM28_01	230GRAB51_01
	Course Name	Sensors and Automation	Introduction to Data Science	Robot Modeling
II	Course Code	230GETM16_02	230GCSM29_02	230GRAB52_02
	Course Name	IOT Basics and Applications	Introduction to Artificial Intelligence	Autonomous Mobile Robot


5/6/25

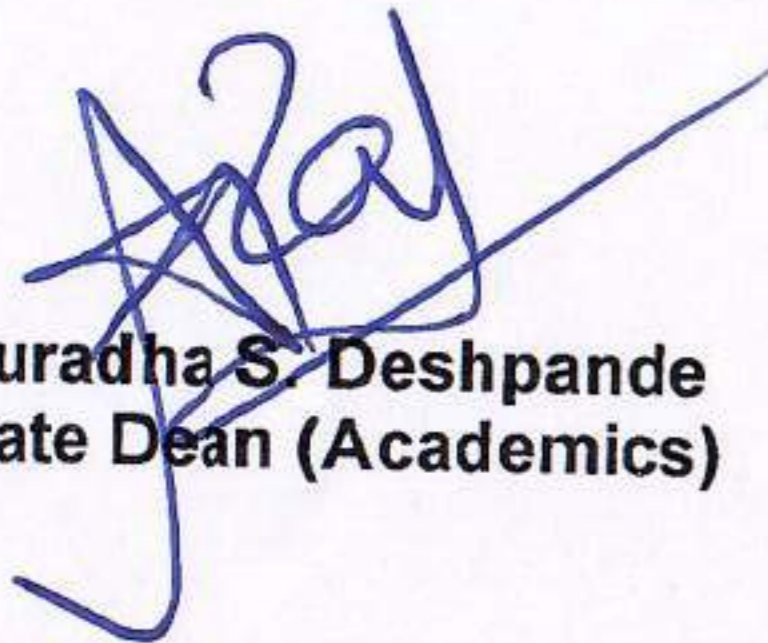
Dr Rajin M. Linus
M.Tech. Coordinator, SECS



Prof. Dr. Rajendrakumar A. Patil
Director, School of Electrical & Communication Sciences



Prof. R. S. Deshpande
Dean, Faculty of Science and Technology



Dr. Anuradha S. Deshpande
Associate Dean (Academics)





Prof. B.B. Ahuja
Vice Chancellor, JSPM University Pune

**Vice Chancellor
JSPM University
Pune**

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JSPM University Pune

COURSE STRUCTURE (NEP 2020 Aligned)

FACULTY OF SCIENCE & TECHNOLOGY

W. E. F

2025-2026

SCHOOL OF ELECTRICAL AND COMMUNICATION SCIENCES

RELEASE DATE

01/07/2025

MASTER OF TECHNOLOGY (Power Electronics and Drives)

REVISION NO.

0.0 (NEP)

SEMESTER II (LEVEL 6.5)

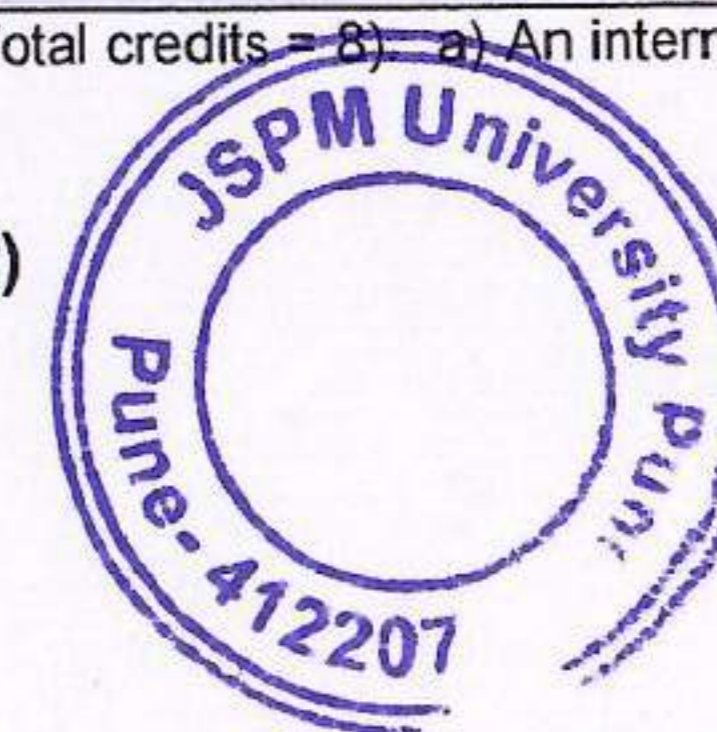
COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS	
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)					
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)			
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)								
PSBC	250GPEM05_02	Switched Mode Power Supplies	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	250GPEM06_02	Digital Control of Power Electronic Systems	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
PCC	250GPEM07_02	Industrial Electrical Drives	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
MMC	---	Multidisciplinary Minors Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
SEC	230GETM19_02	System Design with Embedded Linux	2	-	2	-	-	-	-	-	50	50	50	50	100	3	
VSC	230IINB02_02	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5	
AEC	231UENM02_02	Business Communication	1	-	2	-	-	-	-	-	50	50	-	-	50	2	
RMC	230IRMM02_02	Research Design and Techniques	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
LC	250GPEM08_02	Industrial Electrical Drives Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
LC	250GPEM09_02	PLC and SCADA System Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/F P/CE P	250GPEM10_02	Internship/FieldProject/Community Engagement Programme	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
TOTAL			13	1	10	4									750	22	

Note: A Postgraduate Diploma will be awarded if a student exits after first year. For Exit at the end of first year the student must complete: (Total credits = 8) a) An internship / OJT of 8 - 10 weeks (4 credits). b) Additional Course 1 (4 credits) (Vocational Skill Course (VSC) / Skill Enhancement Course (SEC))

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Rev. Date: 01/07/2025



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Sem.	Multidisciplinary Minors Course (MMC)			
I	Course Code	230GRAM24_01	230GCSM28_01	230GRAB51_01
	Course Name	Sensors and Automation	Introduction to Data Science	Robot Modeling
II	Course Code	230GETM16_02	230GCSM29_02	230GRAB52_02
	Course Name	IOT Basics and Applications	Introduction to Artificial Intelligence	Autonomous Mobile Robot

5/6/25

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[Signature]

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Director, School of Electrical & Communication Sciences

[Signature]

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Dean, Faculty of Science and Technology

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Associate Dean (Academics)



[Signature]

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SCHOOL OF ELECTRICAL AND COMMUNICATION SCIENCES

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(NEP 2020 Aligned)

W. E. F

2026-2027

RELEASE DATE

01/07/2026

MASTER OF TECHNOLOGY (POWER ELECTRONICS AND DRIVES)

REVISION NO.

0.0 (NEP)

SEMESTER III (LEVEL-7)

COURSE		TEACHING SCHEME				EXAMINATION SCHEME AND MARKS										C R E D I T S
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)		T O T A L	
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATI ON (100 / 50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)	END SEMESTER EXAMINATI ON (50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)	END SEMESTER EXAMINATI ON (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assign- ments (40 Marks)							
PEC	---	Program Elective Course -I/MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PEC	---	Program Elective Course -II/MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
IOC	---	Interdisciplinary Open Elective Course -I	2	-	-	-	30	30	40	100	-	-	-	-	100	2
IOC	---	Interdisciplinary Open Elective Course -II	2	-	-	-	30	30	40	100	-	-	-	-	100	2
VEC (HSM C)	230USYB01_03	Behavioral Science and Ethics	2	-	-	-	30	30	40	50	-	-	-	-	50	2
SLC	250GPEM17_03	Seminar	-	-	-	8	-	-	-	-	-	-	-	50	50	2
PROJ	250GPEM18_03	Field Project	-	-	4	8	-	-	-	-	-	-	100	100	4	
TOTAL			12	0	4	16							100	100	100	4
															600	18



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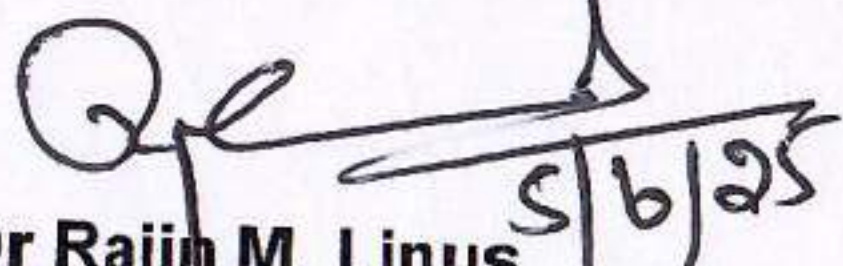
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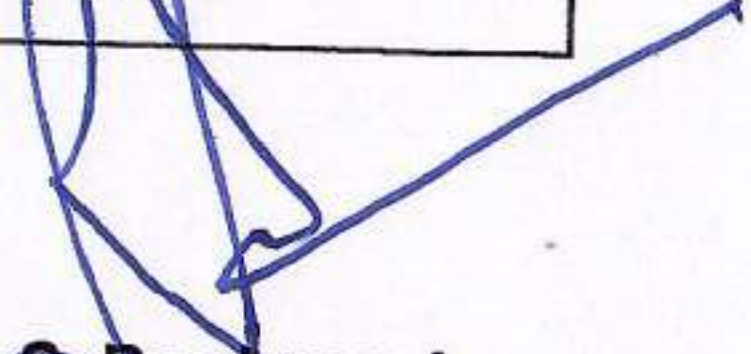
Sem.	Programme Elective Course (PEC- I, II)			
	Specialization/ Verticals	Renewable Energy and Smart Grid	Electric Vehicle (EV) and Control	Energy Management and Audit
III	PEC-I			
	Course Code	250GPEM11_03	250GPEM13_03	250GPE M15_03
	Course Name	Power Electronics for Renewable Energy System	EV Architecture and Power Train Design	Energy Management
	PEC-II			
	Course Code	250GPEM12_03	250GPEM14_03	250GPEM16_03
	Course Name	Energy Storage and Battery Management System	Drives and Control for EV	Energy Audit and Instrumentation
IV	PEC-III			
	Course Code	250GPEM19_04	250GPEM21_04	250GPEM23_04
	Course Name	Modeling and Simulation of Renewable Energy System	EV Charging and Battery Management System	Power Quality and Mitigation
	PEC-IV			
	Course Code	250GPEM20_04	250GPEM22_04	250GPEM24_04
	Course Name	Smart Grid and Communications	EV Simulation and Embedded System	Energy Conservation in Drives

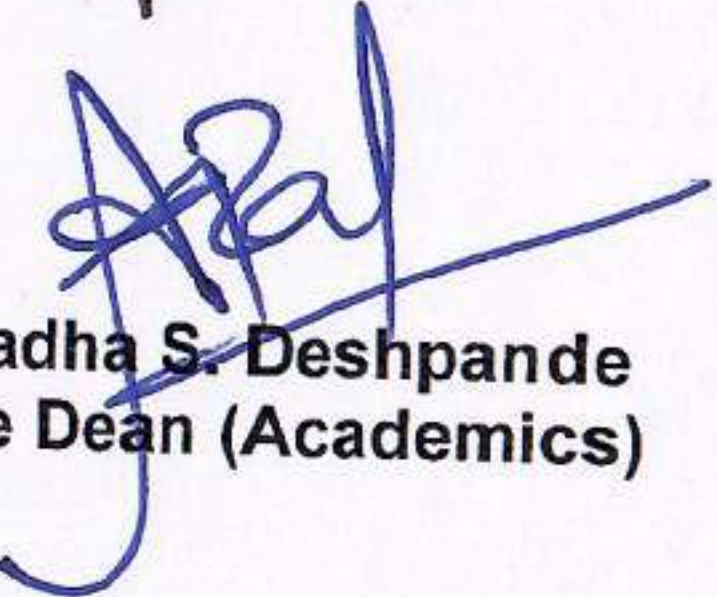
Sem.	Interdisciplinary Open Elective Course -I (IOC-I)			
III	Course Code	230VMSM05_03	230GCSB160_03	230VMSM08_03
	Course Name	Fundamentals of Financial Management	Introduction to Deep Learning	Entrepreneurship and Start up Management


Sem.	Interdisciplinary Open Elective Course -II (IOC-II)			
III	Course Code	230GRAM51_03	230GCSM32_03	230GCSB158_03
	Course Name	Industrial Robotics and Automation	Machine Learning in Practice	Basics of Neural Network


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EL-Experiential Learning
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SCHOOL OF ELECTRICAL AND COMMUNICATION SCIENCES

COURSE STRUCTURE
(NEP 2020 Aligned)

W. E. F

2026-2027

RELEASE DATE

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REVISION NO.

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MASTER OF TECHNOLOGY (POWER ELECTRONICS AND DRIVES)

SEMESTER IV (LEVEL-7)

COURSE		TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								TOTAL	CREDITS	
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS IN SEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS IN SEMESTER EVALUATION (50 Marks)			END SEMESTER EXAMINATION (50 Marks)
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)							
PEC	---	Program Elective Course -III / MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PEC	---	Program Elective Course -IV/ MOOC	3	-	-	-	30	30	40	100	-	-	-	-	100	3
PROJ	250GPEM25_04	Project / Internship with Project	-	-	12	24	-	-	-	-	200	200	100	100	300	12
TOTAL			6	0	12	24									500	18



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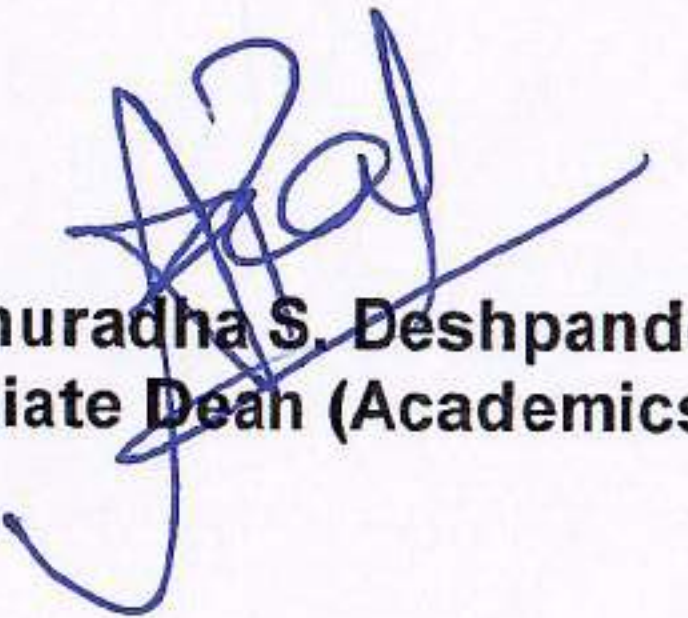
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Sem.	Programme Elective Course (PEC- III, IV)			
	Specialization/ Verticals	Renewable Energy and Smart Grid	Electric Vehicle (EV) and Control	Energy Management and Audit
III	PEC-I			
	Course Code	250GPEM11_03	250GPEM13_03	250GPE M15_03
	Course Name	Power Electronics for Renewable Energy System	EV Architecture and Power Train Design	Energy Management
	PEC-II			
	Course Code	250GPEM12_03	250GPEM14_03	250GPEM16_03
	Course Name	Energy Storage and Battery Management System	Drives and Control for EV	Energy Audit and Instrumentation
IV	PEC-III			
	Course Code	250GPEM19_04	250GPEM21_04	250GPEM23_04
	Course Name	Modeling and Simulation of Renewable Energy System	EV Charging and Battery Management System	Power Quality and Mitigation
	PEC-IV			
	Course Code	250GPEM20_04	250GPEM22_04	250GPEM24_04
	Course Name	Smart Grid and Communications	EV Simulation and Embedded System	Energy Conservation in Drives



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