



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY - GURAJADA - VIZIANAGARAM
VIZIANAGARAM – 535 003 Andhra Pradesh (India)
(Established by Andhra Pradesh Act No.22 of 2021)

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

M.TECH COURSE STRUCTURE & SYLLABUS
Common to

- I. Power Electronics (Course Code: 43)**
- II. Power and Industrial Drives (Course Code: 52)**
- III. Power Electronics & Electrical Drives (Course Code: 54)**

(Applicable for batches admitted from 2025-2026)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY - GURAJADA - VIZIANAGARAM
VIZIANAGARAM – 535 003 Andhra Pradesh (India)
(Established by Andhra Pradesh Act No.22 of 2021)

COURSE STRUCTURE
I Year MTech (Power Electronics Group) I – Semester

S. No.	Course Code	Course Title	L	T	P	C
1	M254301	Electrical Machine Modeling and Analysis	3	1	0	4
2	M254302	Power Electronic Converters	3	1	0	4
3	M254303	Electric Vehicle Technology	3	1	0	4
4	M254304	Program Elective – I Modern Control Theory	3	1	0	4
	M254305	Power Quality Enhancement using Custom Power Devices				
	M254306	Industrial Control Electronics				
5	M254307	Program Elective – II Artificial Intelligence Techniques	3	1	0	4
	M254308	Renewable Energy Technologies				
	M254309	HVDC Transmission and Flexible AC Transmission Systems				
6	M254310	Laboratory – 1 Power Converters Simulation Laboratory	0	1	2	2
7	M254311	Laboratory – 2 Power Converters Laboratory	0	1	2	2
8	M254312	Seminar-I	0	0	2	1
		TOTAL	15	7	6	25

I Year MTech (Power Electronics Group) II – Semester

S. No.	Course Code	Course Title	L	T	P	C
1	N254301	Switched Mode Power Conversion	3	1	0	4
2	N254302	Power Electronic Control of Electrical Drives	3	1	0	4
3	N254303	Digital Controllers for Power Electronic Applications	3	1	0	4
4	N254304	Program Elective – III Control & Integration of Renewable Energy Systems	3	1	0	4
	N254305	Digital Control Systems				
	N254306	Battery Management Systems and Charging Stations				
	N254307	Program Elective – IV Advanced Digital Signal Processing	3	1	0	4
	N254308	Applications of Power Converters				
	N254309	Industrial Internet of Things				
6	N254310	Laboratory – 3 Electric Drives Simulation Laboratory	0	1	2	2
7	N254311	Laboratory – 4 Digital Controllers and Electric Drives	0	1	2	2



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY - GURAJADA - VIZIANAGARAM
VIZIANAGARAM – 535 003 Andhra Pradesh (India)
(Established by Andhra Pradesh Act No.22 of 2021)

		Laboratory				
8	N254312	Seminar – II	0	0	2	1
		TOTAL	15	7	6	25

II Year MTech (Power Electronics Group) I – Semester

Sl. No.	Course Code	Course Title	L	T	P	C
1	O254301	Research Methodology and IPR / <i>Swayam</i> <i>12 week MOOC course – RM&IPR</i>	2	0	0	2
2	O254302	Summer Internship/ Industrial Training (8-10 weeks)*	-	-	-	2
3	O254303	Dissertation Part – A ^{\$}	-	-	20	10
		TOTAL	2	-	20	14

* Student attended during summer / year break and assessment will be done in 3rd Sem.

\$ Dissertation – Part A, internal assessment

II Year MTech (Power Electronics Group) II – Semester

Sl. No.	Course Code	Course Title	L	T	P	C
1	P254301	Dissertation Part – B [%]	-	-	32	16
		TOTAL	-	-	32	16

% External Assessment