JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE STRUCTURE for

M.Tech EEE for

I. POWER SYSTEMS (PS)
II. POWER SYSTEM CONTROL AND AUTOMATION (PSC&A)
III. POWER SYSTEM ENGINEERING (PSE)
IV. POWER SYSTEM CONTROL (PSC)
V. ADVANCED POWER SYSTEMS (APS)
VI. ELECTRICAL POWER ENGINEERING (EPE)
VII. POWER ENGINEERING & ENERGY SYSTEMS (PE&ES)

Programme

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

COURSE STRUCTURE

I Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Power System Operation & Control		3	0	0	3	100
2		PC	Analysis of Power Electronic Converters		3	0	0	3	100
3		PE	Program Elective – I i. Electrical Distribution Automation ii. Renewable Energy Technologies iii. Power System Deregulation		3	0	0	3	100
4		PE	Program Elective – II i. HVDC Transmission ii Advanced Power Systems Protection iii. Power System Reliability		3	0	0	3	100
5			Research Methodology and IPR		2	0	0	2	100
6			Power System Simulation Laboratory – I		0	0	4	2	100
7			Power Systems Laboratory		0	0	4	2	100
8			Audit Course – I		2	0	0	0	100
					16	0	8	18	800

II Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Power System Dynamics and Stability		3	0	0	3	100
2		PC	Real Time Control of Power Systems		3	0	0	3	100
3		PE	Program Elective – III i. EHVAC Transmission ii. Flexible AC Transmission Systems iii. Hybrid Electric Vehicles		3	0	0	3	100
4		PE	Program Elective – IV i. Generation & Measurement of High Voltages ii. Evolutionary Algorithms and Applications iii. Programmable Logic Controllers & Applications		3	0	0	3	100
5			Power System Simulation Laboratory – II		0	0	4	2	100
6			Power Converters Laboratory		0	0	4	2	100
7			Mini Project with Seminar		0	0	4	2	100
8			Audit Course – II		2	0	0	0	100
					14	0	12	18	800

III Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PE	Program Elective – V i. Energy Audit Conservation &Management ii. Smart Grid Technologies iii. Power Quality and Custom Power Devices		3	0	0	3	100
2		OE	Open Elective i. Industrial Safety ii. Artificial Intelligent Techniques iii. Operations Research		3	0	0	3	100
3			Dissertation Phase - I **(to be continued and evaluated next semester)**		0	0	20	10	---
					6	0	20	16	200

IV Semester

S.No	Course No	Category	Course Name	T	P	C	Marks
1			Dissertation Phase-II **(continued from III semester)**	0	32	16	100
				0	32	16	100

Total Credits: 18+18+16+16 = 68

Director (i/c)
Academic Planning
JNTUK Kakinada

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE STRUCTURE for

M.Tech EEE for
Power Electronics & Power systems (PE&PS) Programme

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

COURSE STRUCTURE

I Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Analysis of Power Electronic Converters		3	0	0	3	100
2		PC	Power System Operation & Control		3	0	0	3	100
3		PE	Elective – I i.Control &Integration of Renewable Energy systems ii.Digital Signal Processing iii.Power Quality		3	0	0	3	100
4		PE	Elective – II i. Electrical Distribution Automation ii. HVDC Transmission iii. Advanced Power System Protection		3	0	0	3	100
5			Research Methodology and IPR		2	0	0	2	100
6			Power Electronics Simulation Lab		0	0	4	2	100
7			Power Systems Lab		0	0	4	2	100
8			Audit Course – I		2	0	0	0	100
					16	0	8	18	800

II Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Switched Mode Power Conversion		3	0	0	3	100
2		PC	Real Time Control of Power Systems		3	0	0	3	100
3		PE	Elective III i. Electrical Machine Modeling & Analysis ii. DSP Controlled Drives iii. Application of Power Converters		3	0	0	3	100
4		PE	Elective IV i. EHVAC Transmission ii. Flexible AC Transmission Systems iii. Power System Dynamics & Stability		3	0	0	3	100
5			Power Converters Lab		0	0	4	2	100
6			Power Systems Simulation Lab		0	0	4	2	100
7			Mini Project with Seminar		0	0	4	2	100
8			Audit Course – II		2	0	0	0	100
					14	0	12	18	800

III Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PE	Program Elective –V i. Hybrid Electric Vehicles ii. Optimization Techniques iii. Artificial Intelligent Techniques		3	0	0	3	100
2			Open Elective i. Energy Audit Conservation & Management ii. Operations Research iii. Cost Management of Engineering Projects		3	0	0	3	100
3			Dissertation Phase - I **(to be continued and evaluated next semester)**		0	0	20	10	---
					6	0	20	16	200

IV Semester

S.No	Course No	Category	Course Name	T	P	C	Marks
1			Dissertation Phase-II **(continued from III semester)**	0	32	16	100
				0	32	16	100

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA
KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE STRUCTURE for

M.Tech EEE Common for

I. Power Electronics (PE)
II. Power and Industrial Drives (P&ID)
III. Power Electronics and Electrical Drives (PE &ED)
IV. Power Electronics and Drives (PE&D)
V. Power Electronics and systems (PE&S)
VI. Electrical Machines and Drives (EM&D)

Programme

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

COURSE STRUCTURE

I Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Electrical Machine Modeling and Analysis		3	0	0	3	100
2		PC	Analysis of Power Electronic Converters		3	0	0	3	100
3		PE	Elective – I i. Modern Control Theory ii. Power Quality and Custom Power Devices iii. Programmable Logic Controllers & Applications		3	0	0	3	100
4		PE	Elective – II i. Artificial Intelligence Techniques ii. Renewable Energy Technologies iii. HVDC Transmission and Flexible AC Transmission Systems		3	0	0	3	100
5			Research Methodology and IPR		2	0	0	2	100
6			Power Electronics Simulation Laboratory		0	0	4	2	100
7			Power Converters Laboratory		0	0	4	2	100
8			Audit Course – 1		2	0	0	0	100
					16	0	8	18	800

II Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Switched Mode Power Conversion		3	0	0	3	100
2		PC	Power Electronic Control of Electrical Drives		3	0	0	3	100
3		PE	Elective – III i. Control & Integration of Renewable Energy Systems ii. Hybrid Electric Vehicles iii.Digital Control Systems		3	0	0	3	100
4		PE	Elective – IV i. Advanced Digital Signal Processing ii. Applications of Power Converters iii. Microcontrollers		3	0	0	3	100
5			Electric Drives Simulation Laboratory		0	0	4	2	100
6			Electric Drives Laboratory		0	0	4	2	100
7			Mini Project with Seminar		0	0	4	2	100
8			Audit Course – 2		2	0	0	0	100
					14	0	12	18	800

III Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PE	Program Elective – V i. Digital Signal Processing Controlled Drives ii. Smart Grid Technologies iii. Modeling & Simulation of Power Electronic Systems		3	0	0	3	100
2		OE	Open Elective i.Industrial Safety ii.Energy Audit, Conservation & Management iii.Composite Materials		3	0	0	3	100
3			Dissertation Phase - I **(to be continued and evaluated next semester)**		0	0	20	10	---
					6	0	20	16	200

IV Semester

S.No	Course No	Category	Course Name	T	P	C	Marks
1			Dissertation Phase-II **(continued from III semester)**	0	32	16	100
				0	32	16	100

Total Credits: 18+18+16+16 = 68

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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE STRUCTURE for

M.Tech EEE Common for

High Voltage Engineering (HVE),
Power Systems with emphasis on H. V. Engineering (PSHVE) & High Voltage and Power Systems Engineering (HVPSE) **Programme**

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

COURSE STRUCTURE

I Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Generation and Measurement of High Voltages		3	0	0	3	100
2		PC	Dielectrics and Insulation Engineering		3	0	0	3	100
3		PE	Program Elective – I i.Artificial Intelligence Techniques ii.HVDC Transmission iii.Breakdown Phenomenon in Electrical Insulation		3	0	0	3	100
4		PE	Program Elective – II i. High Voltage Power Apparatus and Diagnostics ii. Collision Phenomena in Plasma Science iii. Advanced Electro Magnetic Fields		3	0	0	3	100
5			Research Methodology and IPR		2	0	0	2	100
6			Simulation Laboratory – I		0	0	4	2	100
7			High Voltage Laboratory		0	0	4	2	100
8			Audit Course – I		2	0	0	0	100
					16	0	8	18	800

II Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	High Voltage Testing Techniques		3	0	0	3	100
2		PC	Surge Phenomenon & Insulation Coordination		3	0	0	3	100
3		PE	Program Elective – III i.Partial Discharge in HV Equipment ii.Gas Insulated Systems and Substations iii. Pulse Power Engineering		3	0	0	3	100
4		PE	Program Elective – IV i.Flexible AC Transmission Systems ii.EHVAC Transmission iii.Smart Grid Technologies		3	0	0	3	100
5			Simulation Laboratory – II		0	0	4	2	100
6			Power Systems Laboratory		0	0	4	2	100
7			Mini Project with Seminar		0	0	4	2	100
8			Audit Course – II		2	0	0	0	100
					14	0	12	18	800

III Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PE	Program Elective –V i. Industrial Safety ii. Power Quality iii. Power System Transients		3	0	0	3	100
2		OE	Open Elective i. Operations Research ii. Energy Audit Conservation & Management iii. Composite Materials		3	0	0	3	100
3			Dissertation Phase - I **(to be continued and evaluated next semester)**		0	0	20	10	---
					6	0	20	16	200

IV Semester

S.No	Course No	Category	Course Name	T	P	C	Marks
1			Dissertation Phase-II **(continued from III semester)**	0	32	16	100
				0	32	16	100

Total Credits: 18+18+16+16 = 68

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KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE STRUCTURE for

M.Tech EEE Common for CONTROL SYSTEMS (CS) & CONTROL ENGINEERING (CE) Programme

(Applicable for batches admitted from 2019-2020)

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

COURSE STRUCTURE

I-Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Advanced Control Theory		3	0	0	3	100
2		PC	Advanced Digital Control Systems		3	0	0	3	100
3		PE	Elective-I i. Computer Controlled Systems ii. Control of Special Machines iii. System and Parameter Identification		3	0	0	3	100
4		PE	Elective-II i. Optimization Techniques ii. Micro Controllers& Applications iii. Stochastic Estimation and Control		3	0	0	3	100
5			Research Methodology and IPR		2	0	0	2	100
6			Control System Simulation Laboratory		0	0	4	2	100
7			Control Systems Laboratory		0	0	4	2	100
8			Audit Course – I		2	0	0	0	100
					16	0	8	18	800

II Semester

S. No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PC	Non-Linear Systems Analysis		3	0	0	3	100
2		PC	Optimal Control Theory		3	0	0	3	100
3		PE	Elective-III i. Digital Signal Processing ii. Robotics and Control iii. Large scale systems		3	0	0	3	100
4		PE	Elective-IV i. Process Control and Automation ii. Decision and Estimation Theory iii. Embedded Computer Control.		3	0	0	3	100
5			Advanced Control System Simulation Laboratory		0	0	4	2	100
6			Advanced Control System Laboratory		0	0	4	2	100
7			Mini Project with Seminar		0	0	4	2	100
8			Audit Course – II		2	0	0	0	100
					14	0	12	18	800

III- Semester

S.No	Course No	Category	Course Name	P.Os	L	T	P	C	Marks
1		PE	Program Elective –V i. Adaptive Control Theory ii. Evolutionary Algorithms and Applications ii. Artificial Intelligent Techniques		3	0	0	3	100
2		OE	Open Elective i. Business Analytics ii. Industrial Safety ii. Cost Management of Engineering Projects		3	0	0	3	100
3			Dissertation Phase - I **(to be continued and evaluated next semester)**		0	0	20	10	---
					6	0	20	16	200

IV- Semester

S.No	Course No	Category	Course Name	T	P	C	Marks
1			Dissertation Phase-II **(continued from III semester)**	0	32	16	100
				0	32	16	100

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