



# Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC & NBA, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTUH, Hyderabad)

(Aziz Nagar, C.B.Post, Hyderabad -500075)

## M. TECH. (ELECTRICAL POWER SYSTEMS) EFFECTIVE FROM ACADEMIC YEAR 2019- 20 ADMITTED BATCH COURSE STRUCTURE AND SYLLABUS

### I Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
19D2CS1101	Modelling of Power System Components	25	75	4	0	0	4
19D2CS1102	AI Techniques in Electrical Engineering	25	75	4	0	0	4
19D2CS1103	Modern Control Theory	25	75	4	0	0	4
19D2E11101 19D2E11102 19D2E11103	1. EHV AC Transmission 2. High Voltage Engineering 3. Advanced Digital Signal Processing	25	75	3	0	0	3
19D2E21101 19D2E21102 19D2E21103	1. Power Quality 2. Microcontrollers and applications 3. Distribution Automation	25	75	3	0	0	3
191EOE1101	<b>*Open Elective – I</b>	25	75	3	0	0	3
19D2LB1101	Power & Energy Systems Lab - I	25	75	0	0	3	2
19D2SM1101	Seminar – I	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>

### II Semester

Category	Course Title	Int. marks	Ext. marks	L	T	P	C
19D2CS1204	Advanced Power System Analysis	25	75	4	0	0	4
19D2CS1205	Flexible AC Transmission Systems (FACTS)	25	75	4	0	0	4
19D2CS1206	Power System Operation and Deregulation	25	75	4	0	0	4
19D2E31201 19D2E31202 19D2E31203	1. Gas Insulated Systems(GIS) 2. Programmable Logic Controllers and applications 3. Energy Auditing Conservation and Management	25	75	3	0	0	3
19D2E41201 19D2E41202 19D2E41203	1. Reactive Power Compensation and Management 2. Power System Reliability 3. Voltage Stability	25	75	3	0	0	3
191EOE1201	<b>*Open Elective – II</b>	25	75	3	0	0	3
19D2LB1201	Power & Energy Systems Lab - II	25	75	0	0	3	2
19D2SM1201	Seminar –II	100	0	0	0	3	2
<b>Total</b>		<b>275</b>	<b>525</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>25</b>



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## III Semester

Course Code	Course Title	Int. marks	Ext. marks	L	T	P	C
19D2CS2107	Technical Paper Writing	100	0	0	3	0	2
19D1CV2101	Comprehensive Viva-Voce	0	100	0	0	0	4
19D1PW2101	Project work Review I	100	0	0	0	22	8
	<b>Total</b>	<b>200</b>	<b>100</b>	<b>0</b>	<b>3</b>	<b>22</b>	<b>14</b>

## IV Semester

Course Code	Course Title	Int. marks	Ext. marks	L	T	P	C
19D1PW2202	Project work Review II	100	0	0	0	24	8
19D1PE2201	Project Evaluation (Viva-Voce)	0	100	0	0	0	16
	<b>Total</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>

\*Open Elective subjects must be chosen from the list of open electives offered by other departments.

## LIST OF OPEN ELECTIVES OFFERED BY EEE

### OPEN ELECTIVE-I

1. RENEWABLE ENERGY SYSTEMS
2. ELECTRICAL INSTALLATION & SAFETY

### OPEN ELECTIVE-II

1. ENERGY FROM WASTE
2. DISTRIBUTED GENERATION AND MICROGRID
3. RELIABILITY ENGINEERING



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*M.Tech R15 Regulations*

## M. TECH. (ELECTRICAL POWER SYSTEMS) COURSE STRUCTURE R 15

### I Year – I Semester

Subject Code	Category	Course Title	Int. marks	Ext. marks	L	P	C
15D2CS1101	Core Course I	Advanced Power System Analysis	40	60	4	--	4
15D2CS1102	Core Course II	Advanced Power System Protection	40	60	4	--	4
15D2CS1103	Core Course III	Modern Control Theory	40	60	4	--	4
15D2E11101 15D2E11102 15D2E11103	Core Elective I	1. EHV AC Transmission 2. High Voltage Engineering 3. Advanced Digital Signal Processing	40	60	4	--	4
15D2E21101 15D2E21102 15D2E21103	Core Elective II	1. Power Quality 2. Microcontrollers and applications 3. Distribution Automation	40	60	4	--	4
15D2OE1101 15D2OE1102 15D2OE1103 15D2OE1104 15D2OE1105 15D2OE1106	Open Elective I	1. Optimization Techniques 2. Digital control systems 3. Renewable energy systems 4. HVDC Transmission 5. Analysis of power converters 6. Embedded Systems	40	60	4	--	4
15D2LB1101	Laboratory I	Power Systems Lab-I	40	60	--	4	2
15D2SM1101	Seminar I	Seminar-I	50	--	--	4	2
<b>Total Credits</b>					<b>24</b>	<b>8</b>	<b>28</b>

### I Year – II Semester

Subject Code	Category	Course Title	Int. marks	Ext. marks	L	P	C
15D2CS1204	Core Course IV	Power System Dynamics	40	60	4	--	4
15D2CS1205	Core Course V	Flexible AC Transmission Systems (FACTS)	40	60	4	--	4
15D2CS1206	Core Course VI	Power System Operation and Deregulation	40	60	4	--	4
15D2E31201 15D2E31202 15D2E31203	Core Elective III	1. Gas Insulated Systems(GIS) 2. Programmable Logic Controllers and their Applications 3. High frequency magnetic components	40	60	4	--	4
15D2E41201 15D2E41202 15D2E41203	Core Elective IV	1. Reactive Power Compensation and Management 2. Power System Reliability 3. Voltage Stability	40	60	4	--	4
15D2OE1201 15D2OE1202 15D2OE1203 15D2OE1204 15D2OE1205 15D2OE1206	Open Elective II	1. Instrumentation & Control 2. Intelligent Control 3. Smart grid technologies 4. AI Techniques in Electrical Engineering 5. Reliability Engineering 6. Energy Auditing, Conservation & Management	40	60	4	--	4
15D2LB1201	Laboratory II	Power Systems Lab-II	40	60	--	4	2
15D2SM1201	Seminar II	Seminar-II	50	--	--	4	2
<b>Total Credits</b>					<b>24</b>	<b>8</b>	<b>28</b>



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*M.Tech R15 Regulations*

## II Year - I Semester

Subject Code	Course Title	Int. marks	Ext. marks	L	P	C
15D2CV2101	Comprehensive Viva-Voce	--	100	--	--	4
15D2PW2101	Project work Review I	50	--	--	24	12
<b>Total Credits</b>				--	24	<b>16</b>

## II Year - II Semester

Subject Code	Course Title	Int. marks	Ext. marks	L	P	C
15D2PW2202	Project work Review II	50	--	--	8	4
15D2PE2201	Project Evaluation (Viva-Voce)	--	150	--	16	12
<b>Total Credits</b>				--	24	<b>16</b>

## JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

## M.TECH - ELECTRICAL POWER SYSTEMS/POWER ENGINEERING AND ENERGY SYSTEMS/ POWER SYSTEM CONTROL AND AUTOMATION/ ELECTRICAL POWER ENGINEERING

## COURSE STRUCTURE AND SYLLABUS

## I Year I Semester

Code	Group	Subject	L	P	Credits
		Advanced Power System Analysis	3	-	3
		Advanced Power System Protection	3	-	3
		Renewable Energy Systems	3	-	3
		Modern Control Theory	3	-	3
	Elective -I	High Voltage Engineering EHVAC Transmission Microcontrollers and Applications	3	-	3
	Elective -II	Power Quality HVDC Transmission Distribution Automation	3	-	3
	Lab	Power Systems Lab-I	-	3	2
		Seminar	-	-	2
		Total Credits	18	3	22

## I Year II Semester

Code	Group	Subject	L	P	Credits
		Power System Dynamics	3	-	3
		Flexible AC Transmission Systems (FACTS)	3	-	3
		Power System Operation and Deregulation	3	-	3
		AI Techniques in Electrical Power Engineering	3	-	3
	Elective -III	Gas Insulated Systems(GIS) Electric Smart Grid Energy Auditing, Conservation and Management	3	-	3
	Elective -IV	Reactive Power Compensation and Management Power System Reliability Voltage Stability	3	-	3
	Lab	Power Systems Lab-II	-	3	2
		Seminar	-	-	2
		Total Credits	18	3	22

## II Year - I Semester

Code	Group	Subject	L	P	Credits
		Comprehensive Viva-Voce	-	-	2
		Project Seminar	-	3	2
		Project work	-	-	18
		Total Credits	-	3	22

## II Year - II Semester

Code	Group	Subject	L	P	Credits
		Project work Part-II and Seminar	-	-	22
		Total Credits	-	-	22