Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Scheme of Instruction for First Year of M. Tech. (PG) Degree in Electrical Power Systems

Semester – I

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	PCC	PS1101	Power System Analysis	3	-	-	3	3	15	15	10	60	100
2	PCC	PS1102	Power System Dynamics	3	-	-	3	3	15	15	10	60	100
3	PEC	PS1113 PS1123 PS1133 PS1143	Renewable Energy Systems Smart Grids High Power Converters Wind and Solar Systems	3	-	-	3	3	15	15	10	60	100
4	PEC	PS1114 PS1124 PS1134 PS1144	Electrical Power Distribution Systems Mathematical Methods for Power Engineering Pulse width Modulation for PE converters Electric and Hybrid Vehicles	3	-	-	3	3	15	15	10	60	100
5	OEC	OE1115 OE1125 OE1135 OE1145 OE1155 OE1165	Business Analysis Industrial Safety Operations Research Cost Management of Engineering Projects Composite Materials Waste to Energy	3	-	-	3	3	15	15	10	60	100
6	MDC	MC1106	Research Methodology	2	-	-	2	2	15	15	10	60	100
7	PCC	PS1107	Power System SteadyState Analysis Lab/ Power System Dynamics Lab / Renewable Energy Lab	-	-	8	8	4	-	-	50	50	100
8	Audit	Audit 1	Audit Course as per List att.	2	-	-	2	0	15	15	10	60	100
			Total	**19**	**00**	**08**	**27**	**21**	**105**	**105**	**120**	**470**	**800**

L- Lecture T-Tutorial P-Practical

CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester performance)

TOTAL CREDITS = **21**

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Scheme of Instruction for First Year of M. Tech. (PG) Degree in Electrical Power System

Semester – II

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	PCC	PS1201	Digital Protection of Power System	3	-	-	3	3	15	15	10	60	100
2	PCC	PS1202	Real Time Control of Power System	3	-	-	3	3	15	15	10	60	100
3	PEC	PS1213 PS1223 PS1233 PS1243	Restructured Power Systems Advanced DSP Dynamics of Electrical M/Cs Power Apparatus Design	3	-	-	3	3	15	15	10	60	100
4	PEC	PS1214 PS1224 PS1234 PS1244	Advanced Microcontroller based Systems SCADA systems and Applications Power Quality AI Techniques	3	-	-	3	3	15	15	10	60	100
5	PEC	PS1215 PS1225 PS1235 PS1235	Power System Transients FACTS and custom Power Devices Industrial Load Modelling and Control Dynamics of Linear Systems	3	-	-	3	3	15	15	10	60	100
6	P/S/IT	PS1206	Mini Project/Industrial Training	-	-	4	4	2	-	-	50	50	100
7	PCC	PS1207	Power System Protection Lab/Power Quality Lab/ AI Lab/PE applications to PS Lab/Smart Grid Lab	-	-	8	8	4	-	-	50	50	100
8	Audit	Audit 2	Audit Course as per List att.	2	-	-	2	0	15	15	10	60	100
			Total	**17**	**-**	**12**	**29**	**21**	**90**	**90**	**160**	**460**	**800**

L- Lecture T-Tutorial P-Practical

CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment

CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester performance)

PROGRESSIVE TOTAL CREDITS 21+21= **42**

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Scheme of Instruction for Second Year of M. Tech. (PG) Degree in Electrical Power System

Semester – III

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	P/S/IT	PS1301	Dissertation I	-	-	20	20	10			100	100	200
			Total	**00**	**00**	**20**	**20**	**10**			**100**	**100**	**200**

L- Lecture T-Tutorial P-Practical
CT1- Class Test 1 TA/CA- Teacher Assessment/Continuous Assessment
CT2- Class Test 2 ESE- End Semester Examination (For Laboratory End Semester performance)

PROGRESSIVE TOTAL CREDITS 42+10 = **52**

Government College of Engineering, Karad

SCHEME OF INSTRUCTION & SYLLABI

Scheme of Instruction for Second Year of M. Tech. (PG) Degree in Electrical Power System

Semester – IV

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits	EXAM SCHEME				
									CT1	CT2	TA/CA	ESE	TOTAL
1	P/S/IT	PS1401	Dissertation II	-	-	32	32	16	-	-	100	200	300
			Total			**32**	**32**	**16**	**-**	**-**	**100**	**200**	**300**

PROGRESSIVE TOTAL CREDITS 52+16 = **68**

List of Audit Courses 1 and 2

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development Through Life Enlightenment Skills

Programme Outcomes of M. Tech in Power Systems

PO	Description
PO1	Ability to apply the enhanced knowledge in advanced technologies for modelling, analysing and solving contemporary issues in power sector with a global perspective.
PO2	Ability to critically analyse and carry out detailed investigation on multifaceted complex Problems in area of Power Systems and envisage advanced research in thrust areas.
PO 3	Ability to identify, analyse and solve real-life engineering problems in the area of Power Systems and provide strategic solutions satisfying the safety, cultural, societal and environmental aspects/ needs.
PO 4	Ability for continued pursuance of research and to design, develop and propose theoretical and practical methodologies towards research and development support for the Power System infrastructure
PO 5	Ability to develop and utilize modern tools for modelling, analysing and solving various Engineering problems related to Power Systems.
PO 6	**Willingness** and ability to work in a team of engineers/ researchers with mutual understandings to take unsophisticated challenges, in the field of Power Systems, lead
PO7	**Willingness** and ability to take up administrative challenges including the management of various projects of interdisciplinary nature and carry out the same in an efficient manner giving due consideration to societal, environmental, economical and financial factors. .
PO8	**Ability** to express ideas clearly and communicate orally as well as in writing with others in an Effective manner, adhering to various national and international standards and practices for the documentation and presentation of the contents

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