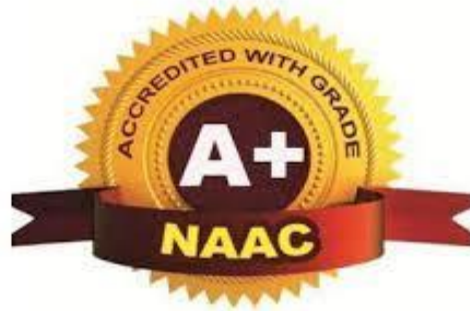




TULSIRAMJI GAIKWAD-PATIL
College of Engineering & Technology

Mohgaon, Wardha Road, Nagpur - 441 108

An Autonomous Institution



DEPARTMENT OF ELECTRICAL ENGINEERING

M.Tech.in Integrated Power System

Teaching Scheme

From

Academic Year 2021-22

Vision of Institute

To emerge as a learning Center of Excellence in the National Ethos in domains of Science, Technology and Management.

Mission of Institute

M1- To strive for rearing standard and stature of the students by practicing high standards of professional ethics, transparency and accountability.

M2- To provide facilities and services to meet the challenges of Industry and Society.

M3- To facilitate socially responsive research, innovation and Entrepreneurship.

M4- To ascertain holistic development of the students and staff members by inculcating knowledge and profession as work practices.

Vision of the Department

To emerge as a learning hub and centre of excellence in the domain of Electrical Engineering

Mission of the Department

M1- To disseminate knowledge replete with quality education in the field of Electrical Engineering in meticulous and methodical manner.

M2- To provide platform to address societal issues as well as challenges faced by industries.

M3- To develop research culture and inculcate innovative and entrepreneurial skills.

M4- To ensure overall development of students and staff by instilling knowledge and professional ethics as a part of lifelong learning.

Program Education Objectives (PEO)

1. Demonstrate and analyze the fundamental knowledge with respect to the various domains of Electrical Engineering.
2. Investigate and apply modern tools to develop innovativeness in different applications of Electrical Engineering domain.
3. Integrate new emerging trends and concepts in Electrical Engineering profession for sustainable development.
4. Develop professionals having managerial and administrative Qualities for Electrical Engineering related industries.
5. Promote lifelong learning, to prepare for the next challenges in the field of Electrical Engineering.

Program Outcomes (PO)

PO1: An ability to independently carry out research /investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. He should be able to inculcate research quality among himself.

Program Specific Outcomes (PSO)

PSO1: Formulate the solutions to Electrical and Electronics Engineering problems using the basic concepts.

PSO2: Develop the process to interpret networks parameters in power system operation and control with their protection and driving mechanisms.

PSO3: Apply project based learning to conduct experiments with Electrical Machines, Power Electronics to develop energy efficient systems.

Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

Scheme of Instructions and Syllabus

Scheme of Instructions for First Year M. Tech. course in Integrated Power Systems

Semester-I (w. e. f.: AY2021-22)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs /week	Credits	Exam Scheme				
									CT- 1	CT- 2	TA	ESE	TOTAL
1.	PCC	MIP1101	Power System Modeling	4	-	-	4	4	15	15	10	60	100
2.	PCC	MIP1102	Power Quality	3	-	-	3	3	15	15	10	60	100
3.	PCC	MIP1103	Advanced Power Electronics	3	-	-	3	3	15	15	10	60	100
4.	PCC	MIP1104	Power Quality Lab	-	-	2	2	1	-	-	25	25	50
5.	PCC	MIP1105	Advanced Power Electronics Lab	-	-	2	2	1	-	-	25	25	50
6.	PEC	MIP1106-09	Program Elective-I	3	-	-	3	3	15	15	10	60	100
7.	PEC	MIP1110-13	Program Elective-II	3	-	-	3	3	15	15	10	60	100
8.	MCC	MAU1101	Pedagogy Studies	2	-	-	2	Audit	-	-	-	-	-
Total				17	1	4	22	18	75	75	100	350	600

L- Lecture T-Tutorial P-Practical CT1-Class Test 1 CT2- Class Test 2 TA - Teacher Assessment

ESE- End Semester Examination (For Laboratory: End Semester Performance)

*-Program Elective /Audit Course/ Open Elective (list is provided at the end of structure)

Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

Scheme of Instructions and Syllabus

Scheme of Instructions for First Year M. Tech. course in Integrated Power Systems

Semester– II (w. e. f.: AY 2021-22)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs /week	Credits	Exam Scheme				
									CT- 1	CT- 2	TA	ESE	TOTAL
1.	PCC	MIP1201	Power System Deregulation	3	-	-	3	3	15	15	10	60	100
2.	PCC	MIP1202	Advanced Power System Protection	3	-	-	3	3	15	15	10	60	100
3.	PCC	MIP1203	Advanced Power System Protection Lab	-	-	2	2	1	-	-	25	25	50
4.	PCC	MIP1204	Power System Analysis & Design Lab	-	-	2	2	1	-	-	25	25	50
5.	PCC	MIP1205	Advanced Power Simulation Lab	-	-	4	4	2	-	-	25	25	50
6.	FC	MIP1206	Research Methodology	2	-	-	2	2	-	-	25	25	50
7.	PEC	MIP1207- 10	Program Elective-III	3	-	-	3	3	15	15	10	60	100
8.	PEC	MIP1211-14	Program Elective-IV	3	-	-	3	3	15	15	10	60	100
9.	MCC	MAU1202	Research Paper Writing	2	-	-	2	Audit	-	-	-	-	-
Total				16	-	8	24	18	60	60	140	340	600

L- Lecture T-Tutorial P-Practical CT1-Class Test 1 CT2- Class Test 2 TA - Teacher Assessment

ESE- End Semester Examination (For Laboratory: End Semester Performance)

*-Program Elective /Audit Course/ Open Elective (list is provided at the end of structure)

PROGRESSIVE CREDITS=18+18=36

Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

Scheme of Instructions and Syllabus

Scheme of Instructions for Second Year M. Tech. course in Integrated Power Systems

Semester– III (w. e. f.: AY2022-23)

Sr. No.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/week	Credits	Exam Scheme				
									CT- 1	CT- 2	TA	ESE	TOTAL
1	PROJ	MIP2301	Dissertation Phase-I	-	-	20	20	10	-	-	100	100	200
2	PEC	MIP2302	MOOC course (8-12) \$	-	-	-	-	3	-	-	-	-	-
3	OEC	M\$XX01-06	Open Elective -I	3	-	-	3	3	15	15	10	60	100
			Total	3	-	20	23	16	-	-	100	100	200

*\$\$-CS, SE, IP, MB, ED

Note:

1. MIP2302 will be decided by respective Guide in Consultation with Program Coordinator. Course is mandatory is for student and his dissertation phase I will be considered incomplete without this Mandatory MOOC Course.
2. \$ Programme coordinator will provide list of 03 MOOC courses of minimum 08 weeks duration (as per availability). Students are expected to complete any one out of three courses in order to get the required credits.

L-Lecture

T-Tutorial

P-Practical

CT1- Class Test 1

TA -Teacher Assessment

CT2- Class Test 2

ESE- End Semester Examination (For Laboratory End Semester performance)

PROGRESSIVE CREDITS=36+16=52

Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

Scheme of Instructions and Syllabus

Scheme of Instructions for Second Year M. Tech. course in Integrated Power Systems

Semester– IV (w. e. f.: AY2022-23)

Sr.	Course Category	Course Code	Course Title	L	T	P	Contact Hrs/week	Credits	Exam Scheme				
									CT- 1	CT- 2	TA	ESE	TOTAL
1.	PROJ	MIP2401	Dissertation Phase-II	-	-	32	32	16	-	-	100	200	300
			Total	-	-	32	32	16	-	-	100	200	300

TA -Teacher Assessment

ESE- End Semester Examination (For Laboratory: End Semester Performance)

TOTAL CREDITS=52+16=68

Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)

Scheme of Instructions and Syllabus

Scheme of Instructions for Second Year M. Tech. course in Integrated Power Systems

List of Program Elective Courses


Semester-I		Semester - II	
Program Elective-I	Program Elective- II	Program Elective- III	Program Elective- IV
MIP1106:Renewable Energy Technologies	MIP1110: Electrical Power Distribution Systems	MIP1207:Facts and Custom power devices	MIP1211: Advanced Microcontroller Based Power Systems
MIP1107:Micro and Smart Grids	MIP1111: Power Apparatus Design	MIP1208:Advanced DSP	MIP1212:SCADA Systems and Applications
MIP1108:Restructured Power system	MIP1112: Control Techniques for Converters	MIP1209:Dynamicsof Electrical M/Cs	MIP1213:Power System Planning & Reliability
MIP1109:Power System Dynamics and Control	MIP1113:Electric Vehicles	MIP1210: Power System Operation and Control	MIP1214:AI Techniques

List of Audit Courses and Open Electives

Semester – I	Semester – II	Semester - III
Audit Course-I	Audit Course-II	Open Electives
MAU1101:Pedagogy Studies	MAU1201:Constitution of India	MCSXX01: Business Analytics
MAU1102:Disaster Management	MAU1202:Research Paper Writing	MMBXX02:Cost Management of Engineering Projects
MAU1103:Sanskrit for Technical Knowledge	MAU1203:Stress Management by Yoga	MSEX03: Composite Materials
MAU1104:Value Education	MAU1204: Personality Development through Life Enlightenment Skills	MIPXX04: Waste to Energy
		MEDXX05:Industrial Safety
		MMBXX06: Operation Research


HOD Chairman
 Department of Electrical Engineering
 Tulsiramji Gaikwad Patil College of
 Engineering & Technology, Nagpur


 Dean Academics
 Dean Academics
 Tulsiramji Gaikwad-Patil
 College Of Engineering
 and Technology, Nagpur


 Principal
 Principal
 Tulsiramji Gaikwad Patil College Of
 Engineering and Technology, Nagpur