MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

Program Code	048
Number of Courses	9-12
Credit Hours	32-35

Minimum Duration : 4 Semesters, 2 Years
Maximum Duration : 8 Semesters, 4 Years
Minimum CGPA required to earn degree 2.50

PROGRAM OBJECTIVES:

The program objectives are to:

- Help graduates develop a more profound knowledge base of the particular subject at an advanced level.
- Equip graduates with the necessary tools to undergo simulation studies, research, optimize engineering designs and solutions.
- Assist and motivate graduates to become leaders, entrepreneurs, consultants, and successful engineers.
- Emphasize importance of continuous learning and skill development to function and survive in a competitive landscape.
- Make graduates understand the importance of team building, effective communication skills, and function efficiently as an individual and as a part of a team.

ELIGIBILITY

Candidates possessing the relevant bachelor of engineering degree, obtained after 16 years of education with 2.00 CGPA on the scale of 4.00 in semester system or at least 50% marks in annual system from recognized institute/university shall be eligible for admission.

Applicant need to pass GAT (General) to be conducted by NTS/ETEA/any Registered Testing Agency or University, with at least 50% cumulative score and to clear departmental interview at the time of Admission.

PROGRAM OUTCOMES:

After completion of the MS program in Electrical Engineering, scholars will be able to:

- Apply knowledge of electrical engineering, mathematics and sciences fundamentals.
- Identify and formulate electrical engineering problem, and to find out their solutions.
- Technically communicate efficiently and clearly using oral, written and graphical form.

SPECIALIZATIONS OFFERED

Electronics and Communications | Power System

ELECTRONICS AND COMMUNICATION

	COURSE CODE	COURSE TITLE	CR. HRS. 9
SEMESTER ONE	EE-635	Wireless Networks	3-0
	EE-626	Solid State Electronics	3-0
	One of the following		
	EE-522	Advanced Digital Signal Processing	3-0
	EE-535	Linear Systems and Control	3-0

POWER SYSTEM

	COURSE CODE	COURSE TITLE	CR. HRS. 9
SEMESTER ONE	EE-603	High Voltage Engineering	3-0
	EE-509	Power System Engineering	3-0
	One of the following		
	EE-535	Advanced Linear Systems and Control	3-0
	EE-517	Power Distribution, Control & Automation	3-0

ELECTRONICS AND COMMUNICATION

SEMESTER TWO

COURSE CODE	COURSE TITLE	CR. HRS. 9
EE 631	Advanced Electronic Devices	3-0
XYZ	Advanced Communication System	3-0
	One of the following	
EE 619	Radio Frequency and Microwave Engineering	3-0
EE 507	Advanced Power Electronics	3-0

SEMESTER THREE

COURSE CODE	COURSE TITLE	CR. HRS. 8
RES581	Research Methodology	2-0
	Elective I	3-0
	Elective II	3-0

SEMESTER FOUR

COURSE CODE	COURSE TITLE	CR. HRS. 6/9
Plan A: MS with Research Work		
RES 690	Research Thesis	0-6
Plan B: MS with Course Work		
	Elective III	3-0
	Elective IV	3-0
	Elective V	3-0

POWER SYSTEM

SEMESTER TWO

COURSE CODE	COURSE TITLE	CR. HRS. 9
EE526	Power System Protection	3-0
EE537	Power System Stability & Control	3-0
One of the following		
EE532	Alternative Energy Resources	3-0
EE 507	Advanced Power Electronics	3-0

SEMESTER THREE

COURSE CODE	COURSE TITLE	CR. HRS. 8
RES581	Research Methodology	2-0
	Elective I	3-0
	Elective II	3-0

SEMESTER FOUR

COURSE CODE	COURSE TITLE	CR. HRS. 6/9
Plan A: MS with Research Work		
RES 690	Research Thesis	0-6
Plan B: MS with Course Work		
	Elective III	3-0
	Elective IV	3-0
	Elective V	3-0

ELECTIVES

ELECTRONICS AND COMMUNICATION

COURSE CODE	COURSE TITLE	CR. HRS.
EE 601	Digital Speech Processing	3-0
EE 637	Optimization Techniques in Engineering	3-0
EE 515	Artificial Intelligence	3-0
EE 605	Digital Video Systems	3-0
EE 619	Advanced Data Communication	3-0
EE 624	Advanced Communication Networks	3-0
EE 630	Biometric Systems	3-0
EE 642	Computational Photonics	3-0

POWER SYSTEM

COURSE CODE	COURSE TITLE	CR. HRS.
EE 514	Power System Planning & Design	3-0
EE 637	Optimization Techniques in Engineering	3-0
EE 607	Power Quality	3-0
EE 613	Flexible AC Transmission	3-0
EE 615	Power System Transients	3-0
EE 623	Advanced Topics in Power Engineering	3-0
EE 560	Energy Management	3-0
EE 604	Distributed Energy Generation	3-0

ELECTRONICS AND COMMUNICATION

COURSE CODE	COURSE TITLE	CR. HRS.
EE 650	Solar Cell Technology	3-0
EE 652	Advanced Nanomaterials for Renewable Energy Applications	3-0
EE 654	Performance, Modeling and Simulation	3-0
EE 609	Computer Vision	3-0
EE 611	Pattern Recognition	3-0
EE 539	Theory of Lasers	3-0
EE 621	Antenna and Wave Propagation	3-0
EE 544	Neural Networks	3-0
EE 536	Advanced Engineering Electromagnetics	3-0
EE 639	Advanced Mobile Communication	3-0
EE 643	Digital Communication	3-0
EE 645	Digital Control Systems	3-0
EE 563	Advanced Optical Communication	3-0
EE 540	Stochastic Processes	3-0
EE 541	Multimedia Systems and Communication	3-0
EE 622	Optics, Vision and Cameras	3-0
EE 628	Nano-Electronics	3-0
EE 632	Optoelectronics and Photonics	3-0
EE 515	Artificial Intelligence	3-0
EE 538	Digital Image Processing	3-0
EE 523	Nanotechnology and Energy	3-0
EE 650	Advanced Communication Systems	3-0
EE 653	Software Defined Networking	3-0
EE 655	Network Design and Management	3-0
EE 657	Switching Technologies for Data Centers	3-0
EE 659	Data Centers and Renewable Energy	3-0

POWER SYSTEM

COURSE CODE	COURSE TITLE	CR. HRS.
EE 652	Advanced Nanomaterials for Renewable Energy Applications	3-0
EE 654	Performance, Modeling and Simulation	3-0
EE 633	Power System Reliability	3-0
EE 641	Modeling & Simulation of Power System Components	3-0
EE 647	Dielectric & Electrical Insulation Materials	3-0
EE 515	Artificial Intelligence	3-0
EE 627	HVDC Transmission	3-0
EE 629	Variable Speed Drive	3-0
EE 645	Digital Control Systems.	3-0
EE 518	Advanced Power Systems Distribution	3-0
EE 519	Electrical Machine Design	3-0
EE 523	Nanotechnology and Energy	3-0
EE 534	Photoactive Materials & Their Characterization	3-0