

# Master of Science in Electrical Engineering Technology

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

Program Code 116  
 Number of Courses 9-12  
 Credit Hours 32-35

## Program Objectives:

The objective of the program 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.
- ▶ Emphasize on upholding professional ethics.

## Eligibility

Candidate having 16 years of education in B-Tech/BSc Engineering Technology/BE in relevant field with 2.00 CGPA on the scale of 4.00 in semester system or at least 50% marks in annual system from any recognized institute/university is eligible to apply.

Applicant needs 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 Technology, scholars will be able to:

- ▶ Apply knowledge of Electrical Technology mathematics and sciences fundamentals
- ▶ Identify and formulate Electrical Technology, 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 Communications

### Power System

Course Code	Course Title	Cr. Hrs. 9
ET-635	Wireless Networks	3-0
ET-626	Solid State Electronics	3-0
One of the following		
ET-522	Advanced Digital Signal Processing	3-0
ET-535	Linear Systems and Control	3-0

Course Code	Course Title	Cr. Hrs. 9
ET-501	Renewable Energy Technologies	3-0
ET-509	Power System Engineering	3-0
One of the following		
ET-535	Advance Linear Systems and Control	3-0
ET-603	High Voltage Engineering	3-0

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### Electronics and Communications

SEMESTER TWO	Course Code	Course Title	Cr. Hrs.
	ET 631	Advanced Electronic Devices	3-0
	ET 607	Advanced Communication Systems	3-0
		One of the following	
	ET 603	Advanced Power Electronics	3-0
	ET 619	Radio Frequency and Microwave Technology	3-0

### Power System

SEMESTER TWO	Course Code	Course Title	Cr. Hrs.
	ET 526	Power System Protection	3-0
	ET 537	Power System Stability & Control	3-0
		One of the following	
	ET 532	Alternative Energy Resources	3-0
	ET 529	Power System Operation	3-0

SEMESTER THREE	Course Code	Course Title	Cr. Hrs.
	RES581	Research Methodology	2-0
		Elective I	3-0
		Elective II	3-0

SEMESTER THREE	Course Code	Course Title	Cr. Hrs.
	RES581	Research Methodology	2-0
		Elective I	3-0
		Elective II	3-0

SEMESTER FOUR	Course Code	Course Title	Cr. Hrs.
		Plan A: MS with Research Work	6/9
	RES 690	Research Thesis	0-6
		Plan B: MS with Course Work	
		Elective III	3-0
		Elective IV	3-0
		Elective V	3-0

SEMESTER FOUR	Course Code	Course Title	Cr. Hrs.
		Plan A: MS with Research Work	6/9
	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 Communications

Course Code	Course Title	Cr. Hrs.
ET 601	Digital Speech Processing	3-0
ET 637	Optimization Techniques in Engineering	3-0
ET 605	Digital Video Systems	3-0
ET 619	Advanced Data Communication	3-0
ET 624	Advanced Communication Networks	3-0
ET 630	Biometric Systems	3-0
ET 642	Computational Photonics	3-0
ET 644	Optical Properties of Nanostructure Materials	3-0
ET 650	Solar Cell Technology	3-0

#### Power System

Course Code	Course Title	Cr. Hrs.
ET 514	Power System Planning & Design	3-0
ET 637	Optimization Techniques in Engineering	3-0
ET 607	Power Quality	3-0
ET 613	Flexible AC Transmission	3-0
ET 615	Power System Transients	3-0
ET 623	Advanced Topics in Power Engineering	3-0
ET 560	Energy Management	3-0
ET 604	Distributed Energy Generation	3-0
ET 650	Solar Cell Technology	3-0

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### Electronics and Communications

Course Code	Course Title	Cr. Hrs.
ET 652	Advanced Nanomaterials for Renewable Energy Applications	3-0
ET 654	Performance, Modeling and Simulation	3-0
ET 609	Computer Vision	3-0
ET 611	Pattern Recognition	3-0
ET-539	Theory of Lasers	3-0
ET 621	Antenna and Wave Propagation	3-0
ET-544	Neural Networks	3-0
ET-536	Advanced Engineering Electromagnetics	3-0
ET 639	Advanced Mobile Communication	3-0
ET 643	Digital Communication	3-0
ET 645	Digital Control Systems	3-0
ET 563	Advanced Optical Communication	3-0
ET 540	Stochastic Processes	3-0
ET 541	Multimedia Systems and Communication	3-0
ET 622	Optics, Vision and Cameras	3-0
ET 628	Nano-Electronics	3-0
ET 632	Optoelectronics and Photonics	3-0
ET 515	Artificial Intelligence	3-0
ET 505	Power Electronics and Machines	3-0
ET 511	Applied Photovoltaics Engineering	3-0
ET 609	Photoactive Materials and Their Characterization	3-0
ET 611	Advanced Computer Networks	3-0
EET 613	Personal and Mobile Communication	3-0
ET 615	Advanced Satellite Communication System	3-0
ET 515	Materials Characterization Techniques	3-0
ET 517	Special Electromechanical Devices	3-0
ET601	Electric Drive Systems	3-0
ET 605	Magnetic Measurements and Electrical Machines	3-0

### Power System

Course Code	Course Title	Cr. Hrs.
ET 604	Distributed Energy Generation	3-0
ET 650	Solar Cell Technology	3-0
ET 652	Advanced Nanomaterials for Renewable Energy Applications	3-0
ET 654	Performance, Modeling and Simulation	3-0
ET 633	Power System Reliability	3-0
ET 641	Modeling & Simulation of Power System Components	3-0
ET 647	Dielectric & Electrical Insulation Materials	3-0
ET 515	Artificial Intelligence	3-0
ET 517	Power Distribution & Control and Automation	3-0
ET 501	Renewable Energy Technologies	3-0
ET 505	Power Electronics & Machines	3-0
ET 507	Hydro Power Engineering	3-0
ET 509	Environment Impact Assessment for Energy System	3-0
ET 511	Applied Photovoltaics Engineering	3-0
ET 513	Renewable Energy Mega Power Plants	3-0
ET 515	Materials Characterization Techniques	3-0
ET 603	Advance Power Electronics	3-0
ET 617	Magnetic Measurements and Electrical Machines	3-0
ET 609	Photoactive Materials and Their Characterization	3-0