

Master of Engineering Program in Electrical Engineering

Research Focus

- Power Electrical Engineering
- Electronics and Embedded Systems
- Control System and Signal Processing
- Communication Engineering

Structure of the Program

1. Credit Requirements *

Requirements	Option 1.2
Coursework	24
- Fundamental Courses	3
- Core Courses	9
- Electives	12
Required Non-credit Courses	4
Thesis	12
Total	36

* Minimum credits required

2. **Fundamental Courses** (A 3-credit course must be selected and approved by the student's advisor.)

Requirements	Option 1.2	
	Course No.	Cr.
Mathematics for Signal Processing	303501	3
Mathematics for Approximation	303502	3
Non-Linear Mathematics	303503	3
Total	1	3

3. Core Courses (Nine credit courses must be selected and approved by the student's advisor.)

Requirements	Option 1.2	
	Course No.	Cr.
Power System Operation and Control	303511	3
Theory of Electrical Machines	303512	3
Energy Conversion Systems	303513	3
Microprocessor-Based System Design	303531	3
Advanced Electronic Circuit Design	303532	3
Noise Reduction Techniques	303533	3
Fundamentals of Control Theory	303551	3
Optimization Theory and Its Applications	303552	3
Signal Processing	303561	3
Stochastic Signals and Systems 1	303571	3
Information Theory	303580	3
Electromagnetic Theory	303581	3
Total	3	9

4. Electives (Twelve credit courses must be selected and approved by the student's advisor.)

Requirements	Option 1.2	
	Course No.	Cr.
Organization and Finance of a Power Utility	303514	3
Optimization and Its Applications in Power Systems	303515	3
Advanced High Voltage Technology	303516	3
Electricity Economics and Planning	303517	3
Power System Dynamics and Stability	303518	3
Power Quality	303519	3
Advanced Energy Technology	303521	3
Electrical Machine Design	303522	3
Photovoltaic Systems Engineering	303523	3
Analysis of DC Power Converter Characteristics	303524	3

Requirements	Option 1.2	
	Course No.	Cr.
Special Topics in Electrical Power Engineering	303528	3
Design of High-Frequency Amplifiers and Oscillators	303540	3
Advanced Network Synthesis and Design	303541	3
Real-time System Programming	303542	3
Opto-electronics	303543	3
Biomedical Electronics	303544	3
Special Topics in Electronics and Embedded Systems 1	303548	3
Special Topics in Electronics and Embedded Systems 2	303549	3
Neural Network and Fuzzy Logic Control	303553	3
Optimal Control Systems	303554	3
Robust Control	303555	3
Image Processing	303562	3
Computer Vision	303563	3
Filter Design	303564	3
Mechatronics and Robotics Systems	303565	3
Wavelets	303566	3
Machine Learning Theory	303567	3
Special Topics in Control System Engineering and Signal Processing	303569	3
Stochastic Signals and Systems 1	303571	3
Stochastic Signals and Systems 2	303572	3
Theory of Optical Fibers and Optical Communications	303573	3
Communication System Design	303574	3
Microwave Circuits: Theory and Techniques	303575	3
Radio Wave Propagation	303576	3
Cellular Radio and Wireless Communications	303577	3
Advanced Digital System Communications	303578	3
Finite Element Method for Electrical Engineering	303582	3
Numerical Methods in Electromagnetics	303583	3
Queuing Theory and Applications	303584	3

Requirements	Option 1.2	
	Course No.	Cr.
Coding Theory	303585	3
Antenna Theory	303586	3
Special Topics in Communication Engineering	303589	3
Total	≥4	≥12

5. Required Non-credit Courses

Requirements	Option 1.2	
	Course No.	Cr.
Electrical Engineering Seminar	303591	1
Research Methodology in Science and Technology	303592	3
Total	2	4

6. Thesis Credit Requirements

Requirements	Option 1.2	
	Course No.	Cr.
Thesis 1, Option 1.2	303593	3
Thesis 2, Option 1.2	303594	3
Thesis 3, Option 1.2	303595	6
Total	3	12