

Department of Electrical Engineering
Graduate Course List for MS & PhD
(Fall-2022 onwards)

S.No	C.Code	General Courses for all Research Clusters	Remarks
1	EE 631	Stochastic Processes	Compulsory for MS
2	EE 651	Linear Systems	Compulsory for MS/ Elective for PhD
3	EE 701	Research Methodology	Compulsory for MS/PhD~ Cr. Hrs.(1-0-1)

S.No	C.Code	Electromagnetics and Photonics Cluster	Remarks
1	EE 611	Electromagnetic Fields	Elective for MS/PhD
2	EE 613	Advanced Optics	Elective for MS/PhD
3	EE 614	Optical Simulation Methods	Elective for MS/PhD
4	EE 615	Antenna Systems	Elective for MS/PhD
5	EE 711	Array Signal Processing	Elective for MS/PhD
6	EE 712	Detection and Estimation Theory	Elective for MS/PhD
7	EE 713	Radar Engineering	Elective for MS/PhD
8	EE 714	Electromagnetic Engineering	Elective for MS/PhD
9	EE 715	Computational Methods of Field Theory	Elective for MS/PhD
10	EE 721	Semiconductor Optoelectronic Devices	Elective for MS/PhD
11	EE 722	Integrated Photonics Circuits Design	Elective for MS/PhD
12	EE 725	Micro and Nano Fabrication Techniques	Elective for MS/PhD
13	EE 811	Advanced Array Signal Processing	Elective for PhD
14	EE 813	Advanced Detection and Estimation Theory	Elective for PhD
15	EE 814	Kalman Filters	Elective for PhD
16	EE 817	Special Topics in Photonics	Elective for PhD
17	EE 818	Special Topics in Lasers and Optics	Elective for PhD
18	EE 819	Special Topics in Radar Systems Engineering	Elective for PhD
19	EE 630	Intelligent Antenna Systems**	Elective for MS/PhD

20	EE 716	Advance Microwave Engineering**	Elective for MS/PhD
21	EE 717	Antennas for 5G and Beyond**	Elective for MS/PhD

* Elective courses of Electrical Engineering program of other streams can also be taken as elective courses.

S.No	C.Code	Communication and Signal Processing Cluster	Remarks
1	EE 632	Adaptive Filters	Elective for MS/PhD
2	EE 633	Advanced Digital Communications I	Elective for MS/PhD
3	EE 634	Advanced Coding Theory	Elective for MS/PhD
4	EE 635	Satellite Communications	Elective for MS/PhD
5	EE 636	Advanced Mobile Communication	Elective for MS/PhD
6	EE 637	Lasers and Optical Sources	Elective for MS/PhD
7	EE 638	Photo-detectors	Elective for MS/PhD
8	EE 731	Optimization Techniques	Elective for MS/PhD
9	EE 732	Advanced Digital Communications II	Elective for MS/PhD
10	EE 733	Information Theory	Elective for MS/PhD
11	EE 734	Multimedia Communications	Elective for MS/PhD
12	EE 735	Optical Waveguide Design	Elective for MS/PhD
13	EE 831	Advanced Wireless Techniques	Elective for PhD
14	EE 832	Space-Time Coding	Elective for PhD
15	EE 833	Adaptive Wireless Transceivers	Elective for PhD
16	EE 834	Statistical Signal Processing	Elective for PhD
17	EE 838	Special Topics in Signal Processing	Elective for PhD
18	EE 839	Special Topics in Digital Communication Systems	Elective for PhD
19	EE 726	Telecommunication & Switching Principles**	Elective for MS/PhD
20	EE 827	Advance Optical Fiber Communication**	Elective for PhD
21	EE 618	Digital Telephony**	Elective for MS/PhD
22	EE 619	Telecommunication Network Management**	Elective for MS/PhD
23	EE 623	Wireless Sensor Networks**	Elective for MS/PhD
24	EE 815	Advance Topics in Wireless Networks**	Elective for PhD

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S.No	C.Code	Power and Control Systems Cluster	Remarks
1	EE 652	Digital Control Systems	Elective for MS/PhD
2	EE 653	System Identification	Elective for MS/PhD
3	EE 654	Adaptive Control	Elective for MS/PhD
4	EE 655	Real-Time Control	Elective for MS/PhD
5	EE 656	Advanced Power Electronics	Elective for MS/PhD
6	EE 657	Evolutionary Engineering Optimization	Elective for MS/PhD
7	EE 659	Power Systems Component Modelling	Elective for MS/PhD
8	EE 751	Power Electronics for Power Systems	Elective for MS/PhD
9	EE 752	Advanced Neural Networks	Elective for MS/PhD
10	EE 753	Intelligent Control	Elective for MS/PhD
11	EE 754	Advanced Robotics and Control	Elective for MS/PhD
12	EE 755	Optimal Control	Elective for MS/PhD
13	EE 756	Robust Control	Elective for MS/PhD
14	EE 757	Sliding Mode Control	Elective for MS/PhD
15	EE758	Dynamics and Controls of Electrical Machines	Elective for MS/PhD
16	EE759	Special Topics in Intelligent Systems and Control	Elective for MS/PhD
17	EE760	Advanced High Voltage Engineering and Breakdown Theory	Elective for MS/PhD
18	EE761	Power System State Estimation	Elective for MS/PhD
19	EE 851	Nonlinear Systems & Control	Elective for PhD
20	EE 852	Advanced Process Control	Elective for PhD
21	EE 853	Power System Operation and Protections	Elective for PhD
22	EE 854	Advanced Topics in Nature Inspired Optimization Techniques	Elective for PhD
23	EE 855	Advanced Topics in Intelligent Systems and Control	Elective for PhD
24	EE 856	Neuro-Fuzzy Control	Elective for PhD
25	EE 857	Stochastic Control	Elective for PhD
26	EE 858	Special Topics in Power and Control	Elective for PhD
27	EE 859	Special Topics in Control Systems	Elective for PhD
28	EE 860	Renewable Power Production and Transportation	Elective for PhD

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S.No	C.Code	Machine Learning and Image Processing Cluster	Remarks
1	EE 671	Digital Image Processing	Elective for MS/PhD
2	EE 672	Data Mining	Elective for MS/PhD
3	EE 673	Advanced Digital Image Processing	Elective for MS/PhD
4	EE 771	Pattern Recognition	Elective for MS/PhD
5	EE 772	Machine Learning	Elective for MS/PhD
6	EE 773	Computer Vision	Elective for MS/PhD
7	EE 774	Medical Imaging	Elective for MS/PhD
8	EE 775	Satellite Imaging	Elective for MS/PhD
9	EE 776	Visual Perception	Elective for MS/PhD
10	EE 777	Compressive Sensing	Elective for MS/PhD
11	EE 778	Graphical Models	Elective for MS/PhD
12	EE 779	Computational Intelligence	Elective for MS/PhD
13	EE 781	Advanced Computer Architecture	Elective for MS/PhD
14	EE 782	Advanced Operating Systems	Elective for MS/PhD
15	EE 783	High Performance Scientific Computing	Elective for MS/PhD
16	EE 871	Special Topics in Pattern Recognition	Elective for PhD
17	EE 872	Special Topics in Signal and Image Processing	Elective for PhD
18	EE 873	Special Topics in Machine Learning	Elective for PhD
19	EE 874	Advanced Computer Vision	Elective for PhD
20	EE 884	Parallel Computer Architecture	Elective for PhD
21	EE 718	Internet of Things and Smart Systems**	Elective for MS/PhD
22	EE 719	Parallel Computing**	Elective for MS/PhD
23	EE 720	Advanced Computer Networks**	Elective for MS/PhD
24	EE 621	Internet Architectures and Protocols**	Elective for MS/PhD
25	EE 820	Selected Topics in Internet of Things (IoT**)	Elective for PhD
26	EE 784	Cyber-Physical Systems Modelling**	Elective for MS/PhD

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S.No	C.Code	Mathematics Courses	Remarks
1	MA 682	Applied Linear Algebra	Elective for MS/PhD
2	MA 689	Probabilistic Methods in Electrical Engineering	Elective for MS/PhD

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S.No	C.Code	Other Engineering Courses	Remarks
1	ME XXX / AE XXX	MEMS Devices and Applications	Elective for MS/PhD
2	MT 794	Design of Microelectromechanical Devices	Elective for MS/PhD

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S.No	C.Code	Compulsory Thesis/Dissertation	Credit Hours
1	EE 797	MS Thesis	(6)
2	EE 700	MS. Thesis in Progress	(0)
3	EE 899	Ph.D. Dissertation	(30)
4	EE 800	Ph.D. Dissertation in Progress	(0)

- * The sequence of the core and elective courses may vary depending upon the faculty availability and PG students' course requirement.

Note:

1. All Double Starred (**) Courses are new, with codes not used before.
2. All courses except EE710 are three credit hour courses.