

DEPARTMENT OF ELECTRICAL ENGINEERING

Sub: List of UG Specialization courses

1. Systems and Control

S.No.	Course No.	Course Name	L-T-P C
1	ELL700	Linear Systems Theory	3-0-0 3
2	ELL702	Nonlinear Systems	3-0-0 3
3	ELL436	Digital Control	3-0-0 3
4	ELL704	Advanced Robotics	3-0-0 3
5	ELL703	Optimal Control Theory	3-0-0 3
6	ELL705	Stochastic Filtering And Identification	3-0-0 3
7	ELL762	Intelligent Motor Controllers	3-0-0 3
8	ELL707	Systems Biology	3-0-0 3
9	ELL708	Selected Topics in Systems and Control	3-0-0 3
10	ELV700	Special Modules in Systems and Control	1-0-0 1
11	ELD450	BTP Part II	0-0-16 8

2. Appliance Engineering

S.No.	Course No.	Course Name	L-T-P C
1	ELL365	Embedded Systems	3-0-0 3
2	ELL319	Digital Signal Processing	3-0-2 4
3	ELL756	Special Electrical Machines	3-0-0 3
4	ELL754	Permanent Magnet Machines	3-0-0 3
5	ELL762	Intelligent Motor controllers	3-0-0 3
6	ELL766	Appliance system	3-0-0 3
7	ELL767	Mechatronics	3-0-0 3
8	ELL450	Special Topics in AE – I	3-0-0 3
9	ELV750	Special Modules in AE – I	1-0-0 1
10	ELD451	BTP Part II	0-0-16 8

3. Smart Grid and Renewable Energy

S.No.	Course No.	Course Name	L-T-P C
1	ELL770	Power System Analysis	3-0-0 3
2	ELL775	Power System Dynamics	3-0-0 3
3	ELL772	Planning and Operation of Smart Grid	3-0-0 3
4	ELL765	Smart Grid Technology	3-0-0 3
5	ELL789	Intelligent Systems	3-0-0 3
6	ELL402	Computer Communications	3-0-0 3
7	ELL417	Renewable Energy Systems	3-0-0 3
8	ELL774	Flexible AC Transmission Systems	3-0-0 3
9	ELL773	High Voltage DC Transmission	3-0-0 3
10	ELL771	Special Topics in SG&RE – I	3-0-0 3
11	ELV451	Special Modules in SG&RE – I	1-0-0 1
12	ELD452	BTP Part II	0-0-16 8

4. Energy Efficient Technologies

S.No.	Course No.	Course Name	L-T-P C
1	ELL743	Photovoltaics	3-0-0 3
2	ELL757	Energy Efficient Motors	3-0-0 3
3	ELL763	Advanced Electrical Drives	3-0-0 3
4	ELL408	Low Power Circuit Design	3-0-0 3
5	ELL797	Energy Efficient Computing	3-0-0 4
6	ELL721	Power Aware Communication	3-0-0 3
7	ELL765	Smart Grid Technology	3-0-0 3
8	ELL453	Special Topics in EET – I	3-0-0 3
9	ELV752	Special Modules in EET – I	1-0-0 1
10	ELD453	BTP Part II	0-0-16 8

5. Electric Transportation

S.No.	Course No.	Course Name	L-T-P C
1	ELL764	Electric Vehicles	3-0-0 3
2	ELL750	Modeling Of Electrical Machines	3-0-0 3
3	ELL767	Mechatronics	3-0-0 3
4	ELL754	Permanent Magnet Machines	3-0-0 3
5	ELL755	Variable Reluctance Machines	3-0-0 3
6	ELL334	DSP Based Control Of Drives	3-0-0 3
7	ELL454	Special Topics in ET – I	3-0-0 3
8	ELV753	Special Modules in ET – I	1-0-0 1
9	ELD454	BTP Part II	0-0-16 8

6. VLSI and Embedded Systems

S.No.	Course No.	Course Name	L-T-P C
1	ELL730	IC Technology	3-0-0 3
2	ELL365	Embedded Systems	3-0-0 3
3	ELL720	Advanced Digital Signal Processing	3-0-2 4
4	ELL734	MOS VLSI Design	3-0-0 3
5	ELL735	Analog Integrated Circuits	3-0-0 3
6	ELL748	System-on-Chip Design and Test	3-0-0 3
7	ELL731	Mixed Signal Circuit Design	3-0-0 3
8	ELL740	Compact Modeling of Semiconductor Devices	3-0-0 3
9	ELL736	Solid State Imaging Sensors	3-0-0 3
10	ELL749	Semiconductor Memory Design	3-0-0 3
11	ELL741	Neuromorphic Engineering	3-0-0 3
12	ELL747	Active and Passive Filter Design	3-0-0 3
13	ELL733	Digital ASIC Design	3-0-2 5
14	ELL455	Special Topics in V&ES – I	3-0-0 3
15	ELV730	Special Modules in V&ES – I	1-0-0 1
16	ELD455	BTP Part II	0-0-16 8

7. Nano-electronic and Photonic Systems

S.No.	Course No.	Course Name	L-T-P C
1	ELL722	Antenna Theory and Techniques	3-0-0 3
2	ELL724	Computational Electromagnetics	3-0-0 3
3	ELL730	IC Technology	3-0-0 3
4	ELL732	Micro and Nanoelectronics	3-0-0 3
5	ELL739	Advanced Semiconductor Devices	3-0-0 3
6	ELL738	Micro and Nano photonics	3-0-0 3
7	ELL743	Photovoltaics	3-0-0 3
8	ELL745	Quantum Electronics	3-0-0 3
9	ELL744	Electronic and Photonic Nanomaterials	3-0-0 3
10	ELL742	Introduction to MEMS Design	3-0-0 3
11	ELL740	Compact Modeling of Semiconductor Devices	3-0-0 3
12	ELL741	Neuromorphic Engineering	3-0-0 3
13	ELL737	Flexible Electronics	3-0-0 3
14	ELL456	Special Topics in NE&PS – I	3-0-0 3
15	ELV731	Special Modules in NE&PS – I	1-0-0 1
16	ELD456	BTP Part II	0-0-16 8

8. Cognitive and Intelligent Systems

S.No.	Course No.	Course Name	L-T-P C
1	ELL409	Machine Intelligence and Learning	3-0-2 4
2	ELL704	Advanced Robotics	3-0-0 3
3	ELL715	Digital Image Processing	3-0-0 3
4	ELL741	Neuromorphic Engineering	3-0-0 3
5	ELL786	Multimedia Systems	3-0-0 3
6	ELL784	Introduction to Machine Learning	3-0-0 3
7	ELL799	Natural computing	3-0-0 3
8	ELL779	Forecasting Techniques for Power Systems	3-0-0 3
9	ELL789	Intelligent Systems	3-0-0 3
10	ELL793	Computer Vision	3-0-0 3
11	ELL794	Human-Computer Interface	3-0-0 3
12	ELL796	Signals and Systems in Biology	3-0-0 3
13	ELL797	Neural Systems and Learning Machines	3-0-0 4
14	ELL798	Agent Technology	3-0-0 3
15	ELL762	Intelligent Motor controllers	3-0-0 3
16	EEL788	Computational Cognition and Perception	3-0-0 3
17	ELL795	Swarm Intelligence	3-0-0 3
18	ELL707	Systems Biology	3-0-0 3
19	ELL457	Special Topics in C&IS – I	3-0-0 3
20	ELV780	Special Modules in C&IS – I	1-0-0 1
21	ELD457	BTP Part II	0-0-16 8

9. Communication Systems and Networking

S.No.	Course No.	Course Name	L-T-P C
1	ELL711	Signal Theory	3-0-0 3
2	ELL411	Digital Communications	3-0-0 3
3	ELL785	Computer Communication Networks	3-0-0 3
4	ELL723	Broadband Communication Systems	3-0-0 3
5	ELL725	Wireless Communications	3-0-0 3
6	BSL719	Telecom switching and transmission	3-0-0 3
7	ELL714	Basic information theory	3-0-0 3
8	ELL717	Optical communication systems	3-0-0 3
9	ELL713	Microwave theory and techniques	3-0-0 3
10	ELL722	Antenna Theory and Techniques	3-0-0 3
11	ELL724	Computational Electromagnetics	3-0-0 3
12	ELL458	Special Topics in CS&N – I	3-0-0 3
13	ELV720	Special Modules in CS&N – I	1-0-0 1
14	ELD458	BTP Part II	0-0-16 8

10. Information Processing

S.No.	Course No.	Course Name	L-T-P C
1	ELL711	Signal Theory	3-0-0 3
2	ELL719	Detection and Estimation Theory	3-0-0 3
3	ELL714	Basic information theory	3-0-0 3
4	ELL720	Advanced Digital Signal Processing	3-0-0 3
5	ELL715	Digital Image processing	3-0-2 4
6	ELL718	Statistical signal processing	3-0-0 3
7	ELL784	Introduction to Machine Learning	3-0-0 3
8	ELL793	Computer vision	3-0-0 3
9	ELL786	Multimedia systems	3-0-0 3
10	CRL707	Human and Machine Speech Communications	3-0-0 3
11	ELL794	Human-Computer Interface	3-0-0 3
12	ELL459	Special Topics in IP – I	3-0-0 3
13	ELL460	Special Topics in IP – II	3-0-0 3
14	ELV781	Special Modules in IP – I	1-0-0 1
15	ELD459	BTP Part II	0-0-16 8