Master of Technology in **Control and Automation**Department of Electrical Engineering

Category	PC	PE	OE	Total
Credits	24	18	6	48

Program	Core					MCL783	Automation Manufacturing	2	0	2	4
ELD801	Major Project Part-I	0	0	12	6	ELL784	Introduction to Machine Learning	3	0	0	3
ELL700	Linear Systems Theory	3	0	0	3	ELL787	Embedded Systems and Applications	3	0	0	3
ELL701	Mathematical Methods in Control	3	0	0	3	ELL789	Intelligent Systems	3	0	0	3
ELL702	Nonlinear Systems	3	0	0	3	ELL791	Neural Systems and Learning Machines	3	0	2	4
ELL703	Optimal Control Theory	3		0		ELL793	Computer Vision	3	0	0	3
ELL705	Stochastic Filtering and Identification	3		0		ELL795	Swarm Intelligence	3	0	0	3
ELP800	Control Systems Laboratory	0		2		ELL796	Signals and Systems in Biology	3	0	0	3
ELP801	Advanced Control Laboratory	0	0	4	2	ELL800	Numerical Linear Algebra and Optimization	3	0	0	3
	Total Credits				24		in Engineering				
Program	Electives					ELL801	Nonlinear Control	3	0	0	3
ELD800	Minor Project (EEA)	0	0	6	3	ELL802	Adaptive and Learning Control	3	0	0	3
ELD802	Major Project Part-II	0		-	12	ELL803	Model Reduction in Control	3	0	0	3
ELL704	Advanced Robotics	3		0		ELL804	Robust Control	3	0	0	3
MTL704	Numerical Optimization	3	0	0	3	ELL805	Networked and Multi-Agent Control Systems	3	0	0	3
ELL707	Systems Biology	3	0	0	3	ELL806	Modeling and Control of Distributed	3	0	0	3
ELL708	Selected Topics in Systems and Control	3	0	0	3		Parameter Systems				
ELL709	Design Aspects in Control	3	0	0	3	ELL807	Stochastic Control	3	0	0	3
DSL711	Sensors & Tranducers	3		0		ELL808	Advanced Topics in Systems and Control	3	0	0	3
ELL714	Basic Information Theory	3		0		MCL845	Advanced Robotics	2	0	2	3
ELL720	Advanced Digital Signal Processing	3			3	ELL850	Digital Control of Power Electronics and	3	0	0	3
MTL731	Introduction to Chaotic Dynamical System	3		-	3		Drive Systems				
ELL762	Intelligent Motor Controllers	3		-	3	ELL883	Embedded Intelligence	3	0	0	3
ELL765	Smart Grid Technology	3		0		ELL888	Advanced Machine Learning	3			
ELL767	Mechatronics	3		0		ELL890	Computational Neuroscience	3		0	
ELL775 ELL778	Power System Dynamics Dynamic Modelling And Control of	3		0		ELL893	Cyber-Physical Systems	3			
ELL//O	Sustainable Energy Systems	3	U	U	J	ELV700	Special Module in Systems and Control	1	-	0	-
	Oustainable Energy Cystems					LLV/00	openial module in dysterns and control		J	U	

Sem.			Courses			Lecture	С	ontac	t h/w	eek	Credits
Jenn.		(Number, Abbrevi	iated Title, L-T-P, Cr	edits)		Cou	L	Т	Р	Total	S
I	ELL700 Linear Systems Theory (3-0-0)	ELL701 Mathematical Methods in Control (3-0-0)	ELL702 Nonlinear Systems (3-0-0)	ELP800 Control Systems Lab (0-0-2)	OE (3-0-0)	4	12	0	2	14	13
II	ELL703 Optimal Control Theory (3-0-0)	ELL705 Stochastic Filtering and Identification (3-0-0)	ELP801 Advanced Control Lab (0-0-4)	PE (3-0-0)		3	9	0	4	13	11
Summer											
III (Project based) OR	ELD801 Major Project Part-I (0-0-12)		PE (3-0-0)	OE (3-0-0)		2	6	0	12	18	12
III (Course based)	PE (3-0-0)	PE (3-0-0)	PE (3-0-0)	OE (3-0-0)		4	12	0	0	12	12
IV (Project based) OR	ELD802 Major Project Part-II (0-0-24)					0	0	0	24	24	12
IV (Course based)	ELD801 Major Project Part-I (0-0-12)		PE (3-0-0)	PE (3-0-0)		2	6	0	12	18	12

Master of Technology in **Communication Engineering**Department of Electrical Engineering

Category	PC	PE	OE	Total
Credits	24	18	6	48

Program	Core					ELL822	Selected Topics in Communication Systems	3	0	0	3
ELD811	Major Project Part-I (Communication Engineering)	0	0	12	6		and Networking-II				
ELL711	Signal Theory	3	0	0	3	ELL833	CMOS RF IC Design			0	
ELL712	Digital Communications	3	0	0	3	ELL894	Network Performance Modeling and Analysis			0	
ELL713	Microwave Theory and Techniques	3	0	0	3	ELP718	Telecommunication Software Laboratory	0		4	
ELL719	Detection and Estimation Theory	3	0	0	3	ELP721	Embedded Telecommunication Systems	0	1	4	3
ELP719	Microwave Laboratory	0	1	4	3		Laboratory				
ELP725	Wireless Communication Laboratory	0	1	4	3	ELV710	Special Module in Cyber Security	1		0	
	Total Credits				24	ELV720	Special Module in Communication Systems	1	0	0	1
Streame	d Electives (EEE) in (Communication Syste	ms)			E11/004	and Networking-I	,	^	^	4
ELD810	Minor Project (Communication Engineering)	0	0	6	3	ELV821	Special Module in Communication Systems and Networking-II	1	U	0	1
ELD812	Major Project Part-II	0			12	CRL708		3	Λ	0	3
ELL701	Mathematical Methods in Control	3	0		3		, , ,	3			3
ELL710	Coding Theory	3	0	0	3		Underwater Electronic Systems RF and Microwave Active Circuits	3		0	-
ELL714	Basic Information Theory	3	0	0	3			3		0	
ELL716	Telecommunication Switching and Transmission	3	0	0	3	CRL/ 15	Radiating Systems for RF Communication	3	U	U	3
ELL717	Optical Communication Systems	3	0	0	3	Stroamo	d Electives (EEE) in (Information Processin	ua)			
ELL720	Advanced Digital Signal Processing	3	0	0	3				_	_	
ELL722	Antenna Theory and Techniques	3	0	0	3	ELD810	Minor Project (Communication Engineering)	0			3
ELL723	Broadband Communication Systems	3	0	0	3	ELD812	Major Project Part-II	0			12
ELL724	Computational Electromagnetics	3	0	0	3	ELL701	Mathematical Methods in Control	3	-	-	3
ELL725	Wireless Communications	3			3	ELL714	Basic Information Theory	3		-	3
ELL730	I.C. Technology	3			3	ELL715	Digital Image Processing	3	-	2	-
ELL732	Micro and Nanoelectronics	3	0		3	ELL718	Statistical Signal Processing	3		-	3
ELL734	MOS VLSI design	3			3	ELL720	Advanced Digital Signal Processing	3		-	3
ELL735	Analog Integrated Circuits	3	0		3	ELL784	Introduction to Machine Learning	3		-	3
ELL785	Computer Communication Networks	3	0		3	ELL786	Multimedia Systems	3	-	-	3
ELL810	Cyber Security and Information Assurance	3	0		3	ELL792	Computer Graphics	3		-	3
ELL812	Microwave Propagation and Systems	3	0		3	ELL793	Computer Vision	3	-	-	3
ELL813	Advanced Information Theory	3	0		3	ELL794	Human-Computer Interface	3		-	3
ELL814	Wireless Optical Communications	3	0		3	ELL823	Selected Topics in Information Processing-I	3		0	
ELL815	MIMO Wireless Communications	3	0		3	ELL824	Selected Topics in Information Processing-II			-	3
ELL816	Satellite Communication	3	0		3	ELV781	Special Modules in Information Processing-I			-	1
ELL818	Telecommunication Technologies	3	0		3	ELV823	Special Modules in Information Processing-II			-	1
ELL821	Selected Topics in Communication Systems	3	0	0	3	CRL704	Sensor Array Signal Processing	3	-	-	3
	and Networking-I					CRL707	Human & Machine Speech Communication	3	0	0	3

Sem.		Courses								eek	Credits
Jenn.		(Number, Abbreviated	d Title, L-T-P, credit	s)		Lecture	L	Т	Р	Total	S
I	ELL 711 Signal theory (3-0-0)	ELL712 Digital Comm. (3-0-0)	ELL 713 Microwave Theory and Techniques (3-0-0)	ELP 719 Microwave Lab. (0-1-4)		3	9	1	4	14	12
II	ELL719 Detection and Estimation Theory (3-0-0)	ELP725 Wireless Comm. Lab. (0-1-4)	PE-1 (3-0-0)	PE-2 (3-0-0)		3	9	1	4	14	12
Summer											
III	ELD811 Major Project Part-I (0-0-12) 6		OE-1 (3-0-0)	OE-2 (3-0-0)		2	6	0	12	18	12
IV (Project based) OR	ELD812 Major Project Part-II (0-0-24) 12				·	0	0	0	24	24	12
IV (Course based)	PE-3 (3-0-0)	PE-4 (3·0·0)	PE-5 (3-0-0)	PE-6 (3-0-0)		4	12	0	0	12	12

Programme Code: **EEN**

Master of Technology in Integrated Electronics and Circuits Department of Electrical Engineering

Category	PC	PE	ОС	Total
Credits	24	18	6	48

Program	Core					ELL739	Advanced Semiconductor Devices	3	0		
ELD831	Major Project Part-I	0	0	12	6	ELL740		3	0		
	(Integrated Electronic Circuits)	-	-	-		ELL741	Neuromorphic Engineering Introduction to MEMS Design	3	0		
ELL730	I.C. Technology	3	0	0	3	ELL742	Introduction to MEMS Design	3	0		
ELL732	Micro and Nanoelectronics	3	0		3	ELL743	Photovoitaics	3	0		
ELL734	MOS VLSI design	3	Ö		3	ELL744	Electronic and Photonic Nanomaterials	3	0		
ELL735	Analog Integrated Circuits	3	0		3	ELL745	Quantum Electronics	3	0		
ELP831	IEC Laboratory-I	Ö	Ö		3	ELL746	Biomedical Electronics	3	0		
ELP832	IEC Laboratory-II		0		3	ELL749	Semiconductor Memory Design	3	0		
	Total Credits	•	·	Ū	24	ELL791	Neural Systems and Learning Machines	3	0		
Ctroomo						ELL830	Issues in Deep Submicron VLSI Design	3		0	
	d Electives (EEN) in (VLSI Design)			_		ELL832	Selected Topics in IEC-I	3	0		
	Synthesis of Digital Systems		0			ELL834	Selected Topics in IEC-II	3	0		
ELD830	Minor Project	0		6		ELP830	· · · · · · · · · · · · · · · · · · ·	0	0		
	Major Project Part-II	0			12	ELP833	Device and Materials Characterization Lab.	0			
ELL720	Advanced Digital Signal Processing	3		0	3	ELV734	Special Module in Scientific Writing for Research		0		
ELL731	Mixed Signal Circuit Design	3	0		3	ELV833	Special Module in Semiconductor Business	1	0	0	1
ELL733	Digital ASIC Design	3		2	4		Management				
ELL736	Advanced Digital Signal Processing Mixed Signal Circuit Design Digital ASIC Design Solid State Imaging Sensors Flexible Electronics	3	0		3	ELV834	Special Module in Nanoelectronics	1	0	0	1
ELL737	Flexible Electronics		0		3	Streame	d Electives (EEN) in (Embedded Intelligent	Sys	ster	ns))
ELL740	Compact Modeling of Semiconductor Devices				3		Synthesis of Digital Systems	3	0		
ELL741	Neuromorphic Engineering		0		3	001 700		3	0		
ELL747	Neuromorphic Engineering Active and Passive Filter Design System-on-Chip Design and Test Semiconductor Memory Design Computer Architecture		0		3	ELD830	Advanced Topics in Embedded Computing Minor Project Major Project Part-II Advanced Digital Signal Processing Mixed Signal Circuit Design Digital ASIC Design	0	0		
ELL748	System-on-Chip Design and Test		0			EI D833	Major Project Part-II	0			12
ELL749	Semiconductor Memory Design	3	0		3	ELL720	Advanced Digital Signal Processing	3	0		
ELL782	Computer Architecture	3	0		3	ELL731	Mixed Signal Circuit Design	3	0		
ELL791	Neural Systems and Learning Machines	3	0	2	4	ELL731	Digital ASIC Design	3	0		
ELL830	Issues in Deep Submicron VLSI Design	3	0		3	ELL733	Solid State Imaging Sensors	3	0		
ELL831	CAD for VLSI, MEMS, and Nanoassembly	3	0	0	3	ELL730		3	0		
ELL832	Selected Topics in IEC-I	3	0	0	3	ELL746 ELL782	System-on-Chip Design and Test	3	0		
ELL833	CMOS RF IC Design	3	0	0	3	ELL782 ELL784	•	3	0		
ELL834	Selected Topics in IEC-II	3	0	0	3		Introduction to Machine Learning		0		
ELP830	Semiconductor Processing Laboratory	0	0	6	3	ELL787	Embedded Systems and Applications	3	0		
ELV734	Special Module in Scientific Writing for Research	1	0	0	1	ELL789	Intelligent Systems	3			
ELV830	Special Module in Low Power IC Design	1	0	0	1	ELL791	Neural Systems and Learning Machines	3	0		
ELV831	Special Module in VLSI Testing	1	0	0	1	ELL830	Issues in Deep Submicron VLSI Design	3	0		
ELV832	Special Module in Machine Learning	1	0	0	1	ELL831	CAD for VLSI, MEMS, and Nanoassembly	3		0	
Stroamo	d Electives (EEN) in (Nanoelectronics and F	ho	tor	nic	e)	ELL832	Selected Topics in IEC-I	3	0		
						ELL834	Selected Topics in IEC-II	3			
ELD830	Minor Project		0			ELL883	Embedded Intelligence	3	0		
	Major Project Part-II	0			12	ELV734	Special Module in Scientific Writing for Research				
ELL737	Flexible Electronics	3	0		3	ELV831	Special Module in VLSI Testing	1	0		
ELL738	Micro and Nano Photonics	3	0	U	3	ELV832	Special Module in Machine Learning	1	0	U	ı

Sem.		Cc	ourses		Lecture	С	ontac	t h/w	reek	Credits
Jeni.		(Number, Abbreviat	ed Title, L-T-P, Cred	dits)	Lec	L	Т	Р	Total	CP
I	ELL732 Micro and Nanoelectronics (3-0-0)	ELL735 Analog Integrated Circuits (3-0-0)	ELL734 MOS VLSI Design (3-0-0)	ELP831 IEC Lab-I (0-0-6)	3	9	0	6	15	12
II	PE (3-0-0)	ELP832 IEC Lab-II (0-0-6)	ELL730 I.C. Technology (3-0-0)	PE/OE (3-0-0)	3	9	0	6	15	12
Summer										
III	ELD831 Major Project Part-I (0-0-12)		PE/OE (3-0-0)	PE/OE (3-0-0)	2	6	0	12	18	12
IV (Project based) OR	ELD832 Major Project Part-II (0-0-24)				0	0	0	24	24	12
IV (Course based)	PE/OE (3-0-0)	PE/OE (3-0-0)	PE/OE (3-0-0)	PE/OE (3-0-0)	4	12	0	0	12	12

Master of Technology in Power Electronics, Electrical Machines and Drives Department of Electrical Engineering

Category	PC	PE	ОС	Total
Credits	24	18	6	48

Program	Core					ELL758	Power Quality	3	-	0	-
ELD851	Major Project Part-I	0	0	12	2 6	ELL759	Power Electronic Converters for Renewable	3	0	0	3
ELL750	Modelling of Electrical Machines	3	0	0	3		Energy Systems				
ELL751	Power Electronic Converters	3	0	0	3	ELL760	Switched Mode Power Conversion	3	-	0	-
ELL752	Electric Drive System	3	0	0	3	ELL761	Power Electronics for Utility Interface	3	0	0	-
ELL850	Digital Control of Power Electronics and	3	0	0	3	ELL762	Intelligent Motor Controllers	3	-	0	-
	Drive Systems					ELL763	Advanced Electric Drives	3	-	0	-
ELP850	Electrical Machines Laboratory	0	0	3	1.5	ELL764	Electric Vehicles	3	-	0	-
ELP851	Power Electronics Laboratory	0	0	3	1.5	ELL765	Smart Grid Technology	3	-	0	-
ELP852	Electrical Drives Laboratory	0	0	3	1.5	ELL766	Appliance Systems	3	0	0	-
ELP853	DSP Based Control of Power Electronics	0	0	3	1.5	ELL767	Mechatronics	3	0	0	-
	and Drives Laboratory					ELL768	Computer Aided Design of Power	3	0	0	3
	Total Credits				24		Electronic Systems				
						ELL787	Embedded Systems and Applications	3		0	3
Program	Electives					ELL791	Neural Systems and Learning Machines	3		2	
Program ELD850	Electives Minor Project	0	0	6	3	ELL851	Computer Aided Design of Electrical Machines	3	0	0	3
	Minor Project	0			3	ELL851 ELL852	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines	3	0	0	3
ELD850		-		24		ELL851	Computer Aided Design of Electrical Machines	3	0	0	3
ELD850 ELD852	Minor Project Major Project Part-II	0	0	24 0	12 3	ELL851 ELL852	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines	3	0 0 0 0	0 0 0	3 3 3 3
ELD850 ELD852 ELL700	Minor Project Major Project Part-II Linear Systems Theory	0	0	24 0 0	12 3	ELL851 ELL852 ELL853	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters	3 3 3	0 0 0 0	0 0 0 0	3 3 3 3
ELD850 ELD852 ELL700 ELL703	Minor Project Major Project Part-II Linear Systems Theory Optimal Control Theory	0 3 3	0 0 0	24 0 0 0	12 3 3	ELL851 ELL852 ELL853 ELL854	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters Advanced Topics in Power Electronics	3 3 3	0 0 0 0	0 0 0	3 3 3 3
ELD850 ELD852 ELL700 ELL703 ELL704	Minor Project Major Project Part-II Linear Systems Theory Optimal Control Theory Advanced Robotics	0 3 3 3	0 0 0	24 0 0 0 0	3 3 3 3	ELL851 ELL852 ELL853 ELL854 ELL855	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters Advanced Topics in Power Electronics Selected Topics in Power Electronics	3 3 3 3	0 0 0 0 0	0 0 0 0 0 0	3 3 3 3 3
ELD850 ELD852 ELL700 ELL703 ELL704 ELL706	Minor Project Major Project Part-II Linear Systems Theory Optimal Control Theory Advanced Robotics Digital Control	0 3 3 3 3	0 0 0 0	24 0 0 0 0 0	12 3 3 3 3	ELL851 ELL852 ELL853 ELL854 ELL855 ELL856	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters Advanced Topics in Power Electronics	3 3 3 3 3	0 0 0 0 0	0 0 0 0 0	3 3 3 3 3
ELD850 ELD852 ELL700 ELL703 ELL704 ELL706 ELL720	Minor Project Major Project Part-II Linear Systems Theory Optimal Control Theory Advanced Robotics Digital Control Advanced Digital Signal Processing	0 3 3 3 3 3	0 0 0 0 0	24 0 0 0 0 0 0	12 3 3 3 3 3	ELL851 ELL852 ELL853 ELL854 ELL855 ELL856 ELL857	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters Advanced Topics in Power Electronics Selected Topics in Power Electronics	3 3 3 3 3 3	0 0 0 0 0 0	0 0 0 0 0 0	3 3 3 3 3 3 3
ELD850 ELD852 ELL700 ELL703 ELL704 ELL706 ELL720 ELL753	Minor Project Major Project Part-II Linear Systems Theory Optimal Control Theory Advanced Robotics Digital Control Advanced Digital Signal Processing Physical Phenomena in Electrical Machines	0 3 3 3 3 3 3	0 0 0 0 0 0	24 0 0 0 0 0 0 0	12 3 3 3 3 3 3	ELL851 ELL852 ELL853 ELL854 ELL855 ELL856 ELL857 ELL858	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters Advanced Topics in Power Electronics Selected Topics in Power Electronics Advanced Topics in Electric Drives	3 3 3 3 3 3 3	0 0 0 0 0 0 0	0 0 0 0 0 0	3 3 3 3 3 3 3 3
ELD850 ELD852 ELL700 ELL703 ELL704 ELL706 ELL720 ELL753 ELL754	Minor Project Major Project Part-II Linear Systems Theory Optimal Control Theory Advanced Robotics Digital Control Advanced Digital Signal Processing Physical Phenomena in Electrical Machines Permanent Magnet Machines	0 3 3 3 3 3 3 3	0 0 0 0 0 0	24 0 0 0 0 0 0 0	12 3 3 3 3 3 3 3	ELL851 ELL852 ELL853 ELL854 ELL855 ELL856 ELL857 ELL858 ELL859	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters Advanced Topics in Power Electronics Selected Topics in Power Electronics Advanced Topics in Electric Drives Selected Topics in Electric Drives	3 3 3 3 3 3 3 3	0 0 0 0 0 0 0	0 0 0 0 0 0 0	3 3 3 3 3 3 3 3
ELD850 ELD852 ELL700 ELL703 ELL704 ELL706 ELL720 ELL753 ELL754 ELL755	Minor Project Major Project Part-II Linear Systems Theory Optimal Control Theory Advanced Robotics Digital Control Advanced Digital Signal Processing Physical Phenomena in Electrical Machines Permanent Magnet Machines Variable Reluctance Machines	0 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0	24 0 0 0 0 0 0 0 0	12 3 3 3 3 3 3 3 3	ELL851 ELL852 ELL853 ELL854 ELL855 ELL856 ELL857 ELL858 ELL859 ELP854	Computer Aided Design of Electrical Machines Condition Monitoring of Electrical Machines Advanced Topics in Electrical Machines Selected Topics in Electrical Machines High Power Converters Advanced Topics in Power Electronics Selected Topics in Power Electronics Advanced Topics in Electric Drives Selected Topics in Electric Drives Electrical Machines CAD Laboratory	3 3 3 3 3 3 3 3 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 4 4	3 3 3 3 3 3 3 3

				are Ses	С	ontac	t h/w	reek	its		
Sem.		(Number, Abbre	Courses eviated Title, L-T-P, (Credits)		Lecture	L	Т	Р	Total	Credits
I	ELL750 Modelling of Electrical Machines (3-0-0)	ELL751 Power Electronic Converters (3-0-0)	ELP850 Electrical Machines Laboratory (0-0-3)	ELP851 Power Electronics Laboratory (0-0-3)	PE/OE (3-0-0)*	3	9	0	6	15	12
II	ELL752 Electric Drive System (3-0-0)	ELL850 Digital Control of Power Electronics and Drive Systems (3-0-0)	ELP852 Electrical Drives Laboratory (0-0-3)	ELP853 DSP Based Control of Power Electronics and Drives Laboratory (0-0-3)	PE/OE (3-0-0)*	3	9	0	6	15	12
			Projec	t Based							
III	ELD851 Major Project Part-I (0-0-12)	PE/OE (3-0-0)*	PE/OE (3-0-0)*			2	6	0	12	18	12
IV	ELD852 Major Project Part-II (0-0-24)					0	0	0	24	24	12
	,	,	(OR) Cou	ırse Based	'	,					,
III	PE/OE (3-0-0)	PE/OE (3-0-0)	PE/OE (3-0-0)	PE/OE (3-0-0)		4	12	0	0	12	12
IV	ELD851 Major Project Part-I (0-0-12)	PE/OE (3-0-0)	PE/OE (3-0-0)			2	6	0	12	18	12

Programme Code: **EES**

Master of Technology in **Power Systems**Department of Electrical Engineering

Category	PC	PE	ОС	Total
Credits	24	18	6	48

Program Core		ELL758	Power Quality	3	0	0	3
ELD871 Major Project Part-I	0 0 126	ELL759	Power Electronic Converters for Renewable	3	0	0	3
ELL770 Power System Analysis	3 0 0 3		Energy Systems				
ELL771 Advanced Power System Protection	3 0 0 3	ELL772	Planning and Operation of a Smart Grid	3	0	0	3
ELL775 Power System Dynamics	3 0 0 3	ELL773	High Voltage DC Transmission	3	0	0	3
ELL776 Advanced Power System Optimization	3 0 0 3	ELL774	Flexible AC Transmission System	3	0	0	3
ELP870 Power System Lab-I	0 1 4 3	ELL777	Power System operation and control	3	0	0	3
ELP871 Power System Lab-II	0 1 4 3	ELL778	Dynamic Modelling And Control of	3	0	0	3
Total Credits			Sustainable Energy Systems				
rotar oroano		ELL779	Forecasting Techniques for Power System	3	0	0	3
Program Electives		ELL870	Restructured Power System	3	0	0	3
ELD870 Minor Project-I	0 0 6 3	ELL871	Distribution System Operation and Planning	3	0	0	3
ELD872 Major Project Part-II	0 0 2412	ELL872	Selected Topics in Power System	3	0	0	3
ELL700 Linear Systems Theory	3 0 0 3	ELL873	Power System Transient	3	0	0	3
ELL712 Digital Communications	3 0 0 3	ELL874	Power System Reliability	3	0	0	3

Sem.	Courses							ontac	Credits			
Jenn.		(number, Abbreviat	ed Title, L-T-P, Cred	lits)		Lecture courses	L	Т	Р	Total 14 14 18 24) ဗီ	
I	ELL 770 Power System Analysis (3-0-0)	ELL771 Advanced Power System Protection (3-0-0)	ELL775 Power System Dynamics (3-0-0)	ELP870 Power System Lab-I (0-1-4)		3	9	1	4	14	12	
II	ELL776 Advanced Power System Optimization (3-0-0)	ELP871 Power System Lab-II (0-1-4)	PE/OE (3-0-0)	PE/OE (3-0-0)		3	9	1	4	14	12	
			Summer									
III	ELD871 Major Project Part-I (0-0-12)		PE/OE (3-0-0)	PE/OE (3-0-0)		2	6	0	12	18	12	
IV (Project based) OR	ELD871 Major Project Part-II (0-0-24)					0	0	0	24	24	12	
IV (Course based)	PE/OE (3-0-0)	PE/OE (3-0-0)	PE/OE (3-0-0)	PE/OE (3-0-0)		4	12	0	0	12	12	

Master of Technology in Computer Technology Department of Electrical Engineering

Category	PC	PE	ос	Total
Credits	21	24/27	3/6	51

Program	Core					ELL748	System-on-Chip Design and Test	3	0		
ELD780		0	0	4	2	ELL766	Appliance Systems	3		0	
ELD880	Major Project Part-I	0	0	12	2 6	ELL767	Mechatronics	3		0	
ELL780	Mathematical Foundations of Computer	3	0	0	3	ELL785	Computer Communication Networks	3	0		
	Technology					ELL786	Multimedia Systems	3	0		
ELL781	Software Fundamentals for Computer	3	0	0	3	ELL790	Digital Hardware Design	3	0		
	Technology					ELL791	Neural Systems and Learning Machines	3			4
ELL782	Computer Architecture	3	0	0	3	ELL797	Energy-Efficient Computing	3	0		
ELL783	Operating Systems	3	0	2	4	ELL802		3	0		
	Total Credits				21	ELL883	Embedded Intelligence	3	0		
Drogram	Electives					ELL887	Cloud Computing	3	0		
		•	_			ELL898	Pervasive Computing	3	0		
	Major Project Part-II				12	ELL899	Testing and Fault Tolerance	3	0		
	Special Topics in Computers-I		0		3	ELP780	Software Lab	0	1		
ELL881				0		ELP781	Digital Systems Lab	0	1		
ELV752	•		0		1	ELP831	IEC Laboratory-I	0	0	6	3
ELV780	Special Module in Computers	1	0	0	1	Streame	d Electives (EET) in (Computer Com	nunic	ati	on	an
Streame	d Electives (EET) in (Cognitive and Intellig	ent	Sys	stei	ms)	Networks					
	d Electives					Required	d Electives				
	Introduction to Machine Learning		0	0	3		Computer Communication Networks	3			3
ELL786	Multimedia Systems	3	0	0	3	ELL786	Multimedia Systems	3	0	0	3
Other Ele	ectives					Other El	actives				
	Advanced Robotics	3	0	0	3		Coding Theory	3	^	0	3
	Systems Biology	3	0		3	ELL710	Signal Theory	3	0		
	Digital Image Processing	3	0		4	ELL711		3		0	
ELL741	Neuromorphic Engineering	3	0		3	ELL712	3				
ELL785	Computer Communication Networks	3	0		3		Basic Information Theory	3	0		
ELL787	•	3	Ö		3	ELL716	Telecommunication Switching and	3	0	U	3
ELL788	Computational Perception and Cognition	3	0		3	ELL717	Transmission Optical Communication Systems	2	^	^	3
ELL789	Intelligent Systems	3	0		3	ELL717	Optical Communication Systems Broadband Communication Systems	3		0	
ELL791	Neural Systems and Learning Machines	3	0	2	4	ELL725	Wireless Communications	3		0	
ELL793	Computer Vision	3	0	0	3	ELL723		3		0	
ELL794	Human-Computer Interface	3	0		3	ELL784 ELL787	Introduction to Machine Learning	3	0		
ELL795	Swarm Intelligence	3	0	0	3	ELL797	Embedded Systems and Applications	3	0		
ELL796	Signals and Systems in Biology	3	0		3	ELL797	Energy-Efficient Computing Advanced Information Theory	3	0		
ELL798	Agent Technologies	3	0	0	3	ELL816	•				
ELL799	Natural Computing	3	0	0	3		Satellite Communication	3	0		
ELL882	Large-Scale Machine Learning	3	0		3	ELL817	Access Networks	3			
ELL883	Embedded Intelligence	3	0		3	ELL818	Telecommunication Technologies	3	0		
ELL884	Information Retrieval	3	0		3	ELL820	Photonic Switching and Networking	3	0		
ELL885	Machine Learning for Computational Finance		0		3	ELL887	Cloud Computing	3	0		
ELL886	Big Data Systems	3	0		3	ELL889	Protocol Engineering	3	0		
	Cloud Computing		0		3	ELL892	Internet Technologies	3		0	
	Advanced Machine Learning			0		ELL894	Network Performance Modeling	3	0	U	3
	Computational Neuroscience			0		EL 1 00E	and Analysis	2	^	^	2
ELL891	•			0		ELL895	Network Security	3			3
ELL893				0		ELL896	Mobile Computing	3			3
						ELL897	Network Management	3			3
Streame	d Electives (EET) in (Embedded Intelligent	Sys	ster	ns)		ELL898	Pervasive Computing	3			3
Required	d Electives					ELP720	,	0	1		3
	Introduction to Machine Learning	2	0	0	2	ELP780	Software Lab	0	1		3
	Embedded Systems and Applications			0		ELP781	Digital Systems Lab	0			3
ELLIOI	Embedded Systems and Applications	3	U	U	3	ELP782	•	0			3
Other Ele	ectives					ELP821	Advanced Telecommunication Networks	0	1	4	3
	Synthesis of Digital Systems	3	0	2	4	El Dooc	Laboratory	^	_		^
	System Level Design and Modelling		0		3	ELP822	Network Software Laboratory	U	1	4	3
	Advanced Robotics	3		0		Stroomo	d Electives (EET) in (Multimedia Informat	ion D	.00	061	sina
ELL710	Coding Theory	3	0	0	3	Gueanie	a Elocuves (EET) in (mainineala infollitat	-OII FI	50	-3:	21116
	Advanced Digital Signal Processing	3	0	0	3	Required	d Electives				
ELL728		3	0	0	3		Multimedia Systems	3	0	0	3
ELL731	Mixed Signal Circuit Design	3	0	0	3		Embedded Systems and Applications				3
	Digital ASIC Design	3	0	2	4						
ELL733	S S										
	MOS VLSI design		0	0	3	Other El	ectives Coding Theory	_			3

ELL711	Signal Theory	3	0	0	3	Other Electives			
ELL714	Basic Information Theory	3	0	0	3	ELL723 Broadband Communication Systems 3	0	0	3
ELL715	Digital Image Processing	3	0	2	4	ELL765 Smart Grid Technology 3	0	0	3
ELL718	Statistical Signal Processing	3	0	0	3	ELL766 Appliance Systems 3	0	0	3
ELL719	Detection and Estimation Theory	3	0	0	3	ELL772 Planning and Operation of a Smart Grid 3	0	0	3
ELL720	Advanced Digital Signal Processing	3	0	0	3	ELL786 Multimedia Systems 3	0	0	-
ELL784	Introduction to Machine Learning	3	0	0	3	ELL787 Embedded Systems and Applications 3	0	0	
ELL785	Computer Communication Networks	3	0	0	3	ELL797 Energy-Efficient Computing 3	0	0	
ELL788	Computational Perception and Cognition	3	0	0	3	ELL798 Agent Technologies 3	0	0	-
ELL792	Computer Graphics	3	0	0	3	ELL884 Information Retrieval 3	0	0	•
ELL793	Computer Vision	3	0	0	3	ELL887 Cloud Computing 3	0	0	-
ELL813	Advanced Information Theory	3	0	0	3	ELL892 Internet Technologies 3	0	0	-
ELL882	Large-Scale Machine Learning	3	0	0	3	ELL895 Network Security 3	0	0	-
CRL707	Human & Machine Speech Communication	3	0	0	3	ELL896 Mobile Computing 3	0	0	-
	·					ELL898 Pervasive Computing 3	0	•	3
Streamed	d Electives (EET) in (Internet Technologies)					ELP721 Embedded Telecommunication Systems Laboratory 0	1	4	-
Poquirod	Flootives					ELP780 Software Lab 0	1	-	3
	l Electives	_	_	_	_	ELP781 Digital Systems Lab 0	1	4	-
ELL784	Introduction to Machine Learning					ELP782 Computer Networks Lab 0	1	4	
ELL785	Computer Communication Networks	3	0	0	3	ELP855 Smart Grids Laboratory 0	1	4	3

Sem.		Lecture	С	eek	Credits						
Jenn.		(Number, Abbrev	iated Title, L-T-P, C	redits)		De Lec	L	Т	Р	Total	ဦ
I	ELL780 Mathematical Foundations of Computer Technology (3-0-0)	Software Fundamentals for Computer Technology (3-0-0)	Computer Architecture (3-0-0)	PE-1 (3-0-0)	PE-2 (3-0-0)	5	15	0	0	15	15
II	ELL783 Operating Systems (3-0-2)	ELD780 Minor Project (0-0-4)	PE-3 (3-0-0)	PE-4 (3-0-0)		4	9	0	6	15	12
	Sur	nmer: [PC-6] ELD	880 Major Project P	art 1 (for M.Tech with	Dissertation	າ)					
III (M.Tech. with DIssertation) OR	ELD880 Major Project Part-I (0-0-12)	PE-5 (3-0-0)	OE-1 (3-0-0)			2	6	0	12	18	12
III (M.Tech. without Dissertation)	PE-5 (3-0-0)	PE-6 (3-0-0)	PE-7/OE-1 (3-0-0)	PE-8/OE-2 (3-0-0)		4	12	0	0	12	12
IV (M.Tech. with Dissertation) OR	ELD881 Major Project Part-II (0-0-24)					0	0	0	24	24	12
IV (M.Tech. without Dissertation)	ELD880 Major Project Part-I (0-0-12)	PE-7/OE-1 (3-0-0)	PE-8/OE-2 (3-0-0)			2	6	0	12	18	12

Total = 51