Department of Information and Communication technology, SOT PDEU

Semester	Category Code	Course Code	Course Name	Theory	Tutorial	Practical	Hrs	Credits
Semester 1	BSC	USC102T-T	PHYSICS	3	0	0	3	3
	ESC	UEE106 T	ELEMENTS OF ELECTRICAL ENGINEERING	3	0	0	3	3
	ESC	UCE106T	Element of Civil Engineering & Mechanics	3	0	0	3	3
	BSC	UMA101	MATHEMATICS - I	3	1	2	6	5
	ESC	UMA106T	Programmingith C	1	0	0	1	1
	ESC	UMA106P	Programmin with C Lab	0	0	2	2	1
	HSC	UHS109	PROFESSIONAL ETHICS AND HUMAN VALUES	1	0	0	1	1
	BSC	USC102T-P	PHYSICS Lab	0	0	2	2	1
	ESC	UME103	WORKSHOP PRACTICE	0	0	4	4	2
	ESC	UCE106-P	Element of Civil Engineering & Mechanics Lab	0	0	2	2	1
	ESC	UEE106P	Elements of Electrical Engineering Lab	0	0	0	0	0
				14	**1**	**12**	**27**	**21**
Semester 2	BSC	T	Mathematics – II	3	1	0	4	4
	BSC	T	Engineering Chemistry	3	0	0	3	3
	BSC		Engineering Chemistry Lab	0	0	2	2	1
	ESC	T	Element of Mechanical Engineering	3	0	0	3	3
	ESC		Element of Mechanical Engineering-Lab	0	0	2	2	1
	ESC	T	Basic Electronics	2	0	0	2	2
	ESC		Basic Electronics Lab	0	0	2	2	1
	ESC		Engineering Graphics-Lab	0	0	4	4	2
	HSC	T	Environmental Studies	3	0	0	3	3
	HSC		Communication Skills - I	0	0	2	2	1
	ESC	T	Fundamentals of Python Programming Lab	0	0	2	2	1
	HSC		Civic services and Social Internship (Summer Break)	0	0	0	0	1
	HSC		NCC/NSS/Sports	0	0	2	2	1
				14	**1**	**16**	**31**	**24**

Semester 3	BSC	T	Discrete Mathematical Structures	3	1	0	4	4
	PC	T	Data Structure and Algorithms	3	0	0	3	3
	PC		Data Structure and Algorithms Lab	0	0	2	2	1
	PC	T	Fundamentals of Signal Processing and Communication	3	0	0	3	3
	PC	T	Object Oriented Concepts & Programming	2	0	0	2	2
	PC		Object Oriented Concepts & Programming Lab	0	0	2	2	1
	PC	T	Digital Logic Design and HDL	3	0	0	3	3
	PC		Digital Logic Design and HDL Lab	0	0	2	2	1
	OE	T	OE-1	3	0	0	3	3
				17	**1**	**6**	**24**	**21**

Semester	Category Code	Course Code	Course Name	Theory	Tutorial	Practical	Hrs	Credits
Semester 4	PC	**T**	Analog Circuit Design	3	0	0	3	3
	PC		Analog Circuit Design Lab	0	0	2	2	1
	PC	T	Data Base Management Systems	2	0	0	2	2
	PC		Data Base Management Systems Lab	0	0	2	2	1
	PC	**T**	Computer Organization & Design	2	0	0	2	2
	PC		Computer Organization & Design Lab	0	0	2	2	1
	PC	**T**	Digital Signal Processing	3	0	0	3	3
	PC		Digital Signal Processing Lab	0	0	2	2	1
	OE	**T**	OE-2	3	0	0	3	3
	IND	**T**	Industry 4.0	2	0	0	2	2
	IND		Industry 4.0 Lab	0	0	2	2	1
	HSC		Communication Skills - II	0	0	2	2	1
	Project		Industrial Orientation (3 weeks-summer break)	0	0	0	0	1
				15	**0**	**12**	**27**	**22**
Semester 5	PC	T	Operating System	3	0	0	3	3
	PC		Operating System Lab	0	0	2	2	1
	PC	**T**	RF Engineering	3	0	0	3	3
	PC		RF Engineering Lab	0	0	2	2	1
	PC	**T**	Digital Communication	3	0	0	3	3
	PC		Digital Communication Lab	0	0	2	2	1
	CE	**T**	CE-1(Theory)	2	0	0	2	2
	CE		CE-1(Lab)	0	0	2	2	1
	CE	**T**	CE-2 (Theory)	2	0	0	2	2
	CE		CE-2 (Lab)	0	0	2	2	1
	OE	**T**	OE-3	3	0	0	3	3
				16	**0**	**10**	**26**	**21**
Semester 6	PC	**T**	Embedded Systems	3	0	0	3	3
	PC		Embedded Systems Lab	0	0	2	2	1
	PC	T	AI Systems	3	0	0	3	3
	PC		AI Systems Lab	0	0	2	2	1
	PC	T	Computer Communication and Networking	3	0	0	3	3
	PC		Computer Communication and Networking Lab	0	0	2	2	1
	CE	**T**	CE-3 (Theory)	2	0	0	2	2
	CE		CE-3 (Lab)	0	0	2	2	1
	CE	**T**	CE-4 (Theory)	2	0	0	2	2
	CE		CE-4 (Lab)	0	0	2	2	1
	OE	**T**	OE-4	3	0	0	3	3
	HSC		Communication Skills - III	0	0	2	2	1
	Project		Industrial Training/ IEP (6 weeks-summer break)	0	0	0	0	2
				16	**0**	**12**	**28**	**24**
Semester 7	PC	T	Internet of Things	2	0	0	2	2
	PC		Internet of Things Lab	0	0	2	2	1
	PC	T	Digital CMOS VLSI Circuits	2	0	0	2	2
	PC		Digital CMOS VLSI Circuits Lab	0	0	2	2	1
	CE	T	CE-5 (Theory)	2	0	0	2	2
	CE		CE-5 (Lab)	0	0	2	2	1
	CE	T	CE-6 (Theory)	2	0	0	2	2
	CE		CE-6 (Lab)	0	0	2	2	1
	CE	T	CE-7 (Theory)	2	0	0	2	2
	CE		CE-7 (Lab)	0	0	2	2	1
	Project		Mini Project	0	0	6	6	3
				10	**0**	**16**	**26**	**18**
Semester 8	**Project**		Comprehensive Project	0	0	20	20	**10**

Core Electives For 5th semester	
1. Information Security	1. Information Security Lab
2. Energy Efficient Computing and Communication	2. Energy Efficient Computing and Communication Lab
3. Building blocks of CPS	3. Building blocks of CPS Lab
4. Theory of Automata and Computation	4. Theory of Automata and Computation Lab
5. Probability and Statistics for Data Science	5. Probability and Statistics for Data Science Lab
6. Computer based Financial System Analysis	6. Computer based Financial System Analysis Lab
** Maximum student registration to be 60	** Maximum student registration to be 60

Core Electives For 6th semester	
Machine Learning	Machine Learning Lab
Introduction to GPU based computing	Introduction to GPU based computing Lab
Wireless Sensor Networks	Wireless Sensor Networks Lab
Cloud Architecture and Services	Cloud Architecture and Services Lab
Image Processing	Image Processing Lab
Statistical Signal Processing	Statistical Signal Processing Lab
5G Networks	5G Networks Lab
Cognitive & Software Defined Radio	Cognitive & Software Defined Radio Lab

Core Electives For 7th semester	
Natural Language Processing	Natural Language Processing Lab
Big Data Analytics and Computing	Big Data Analytics and Computing Lab
Deep and Reinforcement Learning	Deep and Reinforcement Learning Lab
Computer Vision	Computer Vision Lab
Fundamentals of Quantum Computing	Fundamentals of Quantum Computing Lab
Edge and Fog Computing	Edge and Fog Computing Lab
Intelligent Sensors and Actuators for IoT	Intelligent Sensors and Actuators for IoT Lab
Real Time Operating System	Real Time Operating System Lab
Bio Inspired Computing	Bio Inspired Computing Lab
High-Speed Computing Structures using FPGA	High-Speed Computing Structures using FPGA Lab
Speech Signal Processing	Speech Signal Processing Lab

Semester	Category Code	Course Code	Course Name	Theory	Tutorial	Practical	Hrs	Credits
				Theory	**Tutorial**	**Practical**	**Hrs**	**Credits**
			Odd Term	**56**	**2**	**42**	**100**	**79**
			Even Term	**47**	**1**	**62**	**110**	**83**
			Total	**103**	**3**	**104**	**210**	**162**

Sr. No	Code	Component	Lec	Tutorial	Practical	Hrs	Credits	Required Credits
1	**HSC**	Humanities & Social Science Including Management Courses	4	0	10	14	10	**8**
2	**BSC**	Basic Science Courses	15	3	4	22	20	**20**
3	**ESC**	Engineering Science Courses including Workshop, drawing, Basic of Electrical, Basic of Mechanical, Computer etc…	13	0	18	31	22	**22**
4	**Ind**	Industry 4.0 Course	2	0	2	4	3	**3**
5	**PC**	Professional Core Courses	43	0	30	73	58	**56**
6	**CE**	Professional Elective Courses related to chosen specialization	14	0	14	28	21	**22**
7	**OE**	Open Elective Subjects from Other technical / emerging subjects	12	0	0	12	12	**16**
8	**Project**	Project work, Seminar or Internship in Industry or elsewhere	0	0	26	26	16	**16**
Overall			**103**	**3**	**104**	**210**	**162**	**163**

Semester	Open Elective courses offered by ICT
3rd and4th	Energy Harvesting for Engineers
	Logisim: Design and Simulation of Digital Logic
	Artificial Intelligence for All
	Introduction to Internet of Things for Industries

5th and 6th	Image Processing for Engineers
	Machine Learning for Basic Sciences
	Fundamentals of IoT
	Sensors and Signal Processing