Indus Institute of Engineering & Technology, Indus University														
B.Tech Electronics and Communication Teaching Scheme 2021-2024														
SEMESTER - I														
Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme						Segment
								Theory		Practical		Total		
								CIE	End Sem	CIE	End Sem	Marks		
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.			
1	MA0111	Calculus	4	3	1	0	4	60	40	0	0	100		BS
2	CH0011	Engineering Chemistry	4	3	0	2	5	60	40	60	40	200		BS
3	EN0111	Technical Communication	3	1	2	0	3	60	40	0	0	100		HS
4	ME0019	Engineering Graphics	3	1	0	4	5	60	40	60	40	200		ES
5	CV0004	Environmental Science	2	2	0	0	2	60	40	0	0	100		ES
6		Indian Knowledge System	3	3	0	0	3	100	0	0	0	100		VA
7	EC0116	*Open Elective 1*	3	2	0	2	4	60	40	60	40	200		OE
8	EC0117	*Open Elective 2*	3	2	0	2	4	60	40	60	40	200		OE
		TOTAL	**25**	**17**	**3**	**10**	**30**	**520**	**280**	**240**	**160**	**1200**		

SEMESTER - II													
Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme					
								Theory		Practical		Total	
								CIE	End Sem	CIE	End Sem	Marks	
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.		Segment
1	MA0211	Differential Equations and Linear Algebra	4	3	1	0	4	60	40	0	0	100	**BS**
2	PH0011	Engineering Physics	4	3	0	2	5	60	40	60	40	200	**BS**
3	EN0211	Business Communication and Presentation Skills	3	1	2	0	3	60	40	0	0	100	**HS**
4	EL0117	Workshop practice	2	0	0	4	4	0	0	60	40	100	**ES**
5	IST0001	Indian Science and Technology	1	1	0	0	1	100	0	0	0	100	**VA**
6	EC0218	Fundamentals of Electronics Devices	4	3	0	2	5	60	40	60	40	200	**ES**
7	EC0219	Electronics Workshop & Practices	2	1	0	2	3	60	40	60	40	200	**ES**
8	EC0216	Open Elective 3	3	3	0	0	3	60	40	60	40	200	**OE**
		TOTAL	**23**	**15**	**3**	**10**	**28**	**460**	**240**	**300**	**200**	**1200**	

SEMESTER - III													
Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme					Segment
								Theory		Practical		Total	
								CIE	End Sem	CIE	End Sem	Marks	
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.		
1	MA0311	Probability, Statistics & Numerical Methods	4	3	1	0	4	60	40	0	0	100	**BS**
2	EC0316	Control Theory	3	2	1	0	3	60	40	0	0	100	**ES**
3	EC0317	Analog Electronics	4	3	0	2	5	60	40	60	40	200	**Core**
4	EC0318	Network Analysis	3	2	1	0	3	60	40	0	0	100	**Core**
5	EC0319	Digital Electronics	4	3	0	2	5	60	40	60	40	200	**Core**
6	EC0322	Design Thinking	2	1	0	2	2	60	40	60	40	200	**BS**
7	SS0301	Human Values and Professional Ethics	2	2	0	0	2	100	0	0	0	100	**HS**
8	EC0321	Internship Credit	2	0	0	0	0	0	0	100	0	100	**IC**
		TOTAL	**24**	**16**	**3**	**6**	**24**	**460**	**240**	**280**	**120**	**1100**	

SEMESTER - IV													
Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme					
								Theory		Practical		Total	
								CIE	End Sem	CIE	End Sem	Marks	
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.		Segment
1	**EC0423**	Microprocessor & Microcontroller	4	3	0	2	5	60	40	60	40	200	Core
2	**EC0417**	Linear Integrated Circuits	4	3	0	2	5	60	40	60	40	200	Core
3	**EC0418**	Signals & Systems	4	3	1	0	4	60	40	0	0	100	Core
4	**BB0311**	Management for Engineers	2	2	0	0	2	60	40	0	0	100	HS
5	**EC0419**	Digital System Design	3	2	0	2	4	60	40	60	40	200	Core
6	**EC0421**	Open Elective 4	3	3	0	0	3	60	40	0	0	100	OE
8	**EC0422**	Open Elective 5	3	3	0	0	3	60	40	0	0	100	Extra OE Credit
		TOTAL	**20**	**16**	**1**	**6**	**24**	**460**	**240**	**120**	**80**	**900**	

SEMESTER - V														
Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme						
								Theory		Practical		Total		
								CIE	End Sem	CIE	End Sem	Marks		
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.			Segment
1	**EC0516**	Principles of Communication Systems	3	3	0	0	3	60	40	0	0	100		Core
2	**EC0517**	Electromagnetics	4	3	1	0	4	60	40	0	0	100		Core
3	**EC0525**	Python Programming	4	3	0	2	5	60	40	60	40	200		Core
4	**EC0519**	Sensors & Transducers	4	3	0	2	5	60	40	60	40	200		PE1
	EC0526	Advanced Electronics												
	EC0527	System Verilog for verification												
5	**EC0522**	Digital Signal Processing	4	3	0	2	5	60	40	60	40	200		Core
6		Entrepreneurship Development	2	2	0	0	2	60	40	0	0	100		HS
7	**EC0523**	Internship Credit	2	0	0	0	0	0	0	100	0	100		IC
8	**EC0524**	***Open Elective 6***	**3**	**3**	**0**	**0**	**3**	**60**	**40**	**0**	**0**	**100**		**Extra Credit OE**
		TOTAL	**23**	**17**	**1**	**6**	**24**	**360**	**240**	**240**	**120**	**1000**		

SEMESTER - VI													
Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme					
								Theory		Practical		Total	
								CIE	End Sem	CIE	End Sem	Marks	
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.		Segment
1	**EC0616**	VLSI Design	4	3	0	2	5	60	40	60	40	200	Core
2	**EC0617**	Data communication and Networking	3	2	0	2	4	60	40	60	40	200	Core
3	**EC0618**	Digital Communication	4	3	0	2	5	60	40	60	40	200	Core
4	**EC0624**	Microwave and Radar Engineering	4	3	0	2	5	60	40	60	40	200	PE2
	EC0620	Optical Communication											
	EC0621	Digital Image Processing											
5	**EC0623**	*Open Elective-7*	3	3	0	0	3	60	40	0	0	100	OE
		TOTAL	**18**	**14**	**0**	**8**	**22**	**300**	**200**	**240**	**160**	**900**	

SEMESTER - VII														
Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme						Segment
								Theory		Practical		Total		
								CIE	End Sem	CIE	End Sem	Marks		
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.			
1	EC0716	Cryptography and Cyber Security	3	3	0	0	3	60	40	0	0	100		ES
2	EC0728	*Open Elective 8*	3	3	0	0	3	60	40	0	0	100		OE
3	EC0717	Wireless Communication	4	3	0	2	5	60	40	60	40	200		PE3
	EC0718	Biomedical Instrumentation and Imaging												
	EC0719	Embedded System												
4	EC0733	Machine learning	4	3	0	2	5	60	40	60	40	200		PE4
	EC0721	Antenna & Wave Propagation												
	EC0722	Error correcting codes												
5	EC0723	Satellite Communication	3	2	0	2	4	60	40	60	40	200		PE5
	EC0724	IOT and Applications												
	EC0725	Analog VLSI design												

6	MA0712	Optimization Techniques	3	2	1	0	3	60	40	0	0	100	BS
7	EC0727	Internship Credit	2	0	0	0	0	0	0	100	0	100	IC
8	EC0729	Open Elective 9	3	3	0	0	3	60	40	0	0	100	Extra Credit OE
	EC0730	Robotics and Computer Vision											
	EC0731	Mobile Communication and Networks											
9	EC0732	IoT Communication Networks	4	3	0	2	5	60	40	60	40	200	Extra Credit PE
		TOTAL	**22**	**16**	**1**	**6**	**23**	**360**	**240**	**180**	**120**	**900**	

SEMESTER - VIII

Sr. No.	Subject Code	Name of the subject	CREDIT	Teaching Scheme (per week)				Evaluation Scheme					Segment
								Theory		Practical		Total	
								CIE	End Sem	CIE	End Sem	Marks	
				Th.	Tut.	Pr.	Total (hr.)	Th.	Th.	Pr.	Pr.		
1	EC0816	Project	15	0	0	30	30	0	0	60	40	100	Project
		TOTAL	**15**	**0**	**0**	**30**	**30**	**0**	**0**	**60**	**40**	**100**	
		* Students to have options of micro electives (modules of approx. 30 hrs. being taken by domain experts on the basis of availability and approval of Hon'ble EP through respective Director and Dean)											

		* MOOCs, micro electives to be kept as options for students aspiring for accruing more credits as per their capabilities, while making these available also for satisfying the departmental and open electives which are mandatory with appropriate approval from EP through respective Director and Dean Faculty	
		*We are offering 9 open electives out of which 6 open electives are compulsory for students to opt. while for 3 open electives, if a student opts he/she can earn 9 extra credits.	

List of Open Electives for Students of B.Tech (ECE)

SEM	Open Elective	Subject Code	Offering Department	Subject		Teaching Scheme		
					Credits	Th.	Tut	Pr
1	Open Elective 1	CE0116	CE/CS/IT	Computer programming	3	2	-	2
		AU0121	Auto	Basic Automobile Engineering	3	3	0	0
			Meta	Metallurgy for Non-Metallurgists	3	3	0	0
		EL0116	EL	Basics of DC Circuits	3	3	0	0
		ME0118	Mech	Basic Mechanical Engineering	3	2	0	2
		CV0121	Cvl	Basics of Civil Engineering	3	2	0	2

1	**Open Elective 2**	CE0117	CE/CS/IT	Information Communication Technology (Networking Basics)	3	2	-	2
		AU0122	Auto	Fundamentals of Automobile Engines	3	2	0	2
			Meta	Materials Science	3	3	0	0
		EL0117	EL	Basics of AC Circuits	3	3	0	0
		ME0220	Mech	Introduction to Design & Innovation	3	3	0	0
		CV0122	Cvl	Applied Mechanics	3	2	1	0
2	**Open Elective 3**	CE0218	CE/CS/IT	Object Oriented Programming	3	2	-	2
		AU0123	Auto	Fundamentals of Automobile Systems	3	2	0	2
			Meta	Advanced Materials	3	3	0	0
		EL0216	EL	AC & DC Machines	3	3	0	0
		ME0221	Mech	Introduction to Smart Material	3	2	0	2

		CV0223	Cvl	Solid Waste Management	3	3	0	0
4	**Open Elective 4**	CE0419	CE/CS/IT	Cyber Security and Intellectual Property Rights	3	3	-	-
		AU0421	Auto	Off Road Vehicles	3	3	0	0
			Meta	Metal Casting and Solidification	3	3	0	0
		EL0422	EL	Solar and Wind Energy System	3	3	0	0
		ME0434	Mech	Roadmap for Patent creation	3	3	0	0
		CV0424	Cvl	Engineering Materials for Sustainability	3	3	0	0
			SH	Complex Analysis	3	2	1	0
4	**Open Elective 5**	CE0420	CE/CS/IT	Web Design	3	2	-	2
		AU0422	Auto	Modern Vehicle Technology	3	3	0	0
			Meta	Energy Economy and Waste Management	3	3	0	0

		EL0423	EL	Solid State Devices and Applications	3	3	0	0
		ME0435	Mech	Energy Management	3	3	0	0
		CV0425	Cvl	Metro Systems and Engineering	3	2	0	2
			SH	Discrete Mathematics	3	2	1	0
5	**Open Elective 6**	CE0523	CE/CS/IT	Python Programming	3	2	-	2
		AU0521	Auto	Modern Quality Tools	3	3	0	0
			Meta	Nano Technology	3	3	0	0
		EL0523	EL	Photovoltaic System	3	3	0	0
		ME0544	Mech	Introduction to Robotics	3	3	0	0
		CV0526	Cvl	Disaster Management	3	3	0	0
			SH	Finite Element Method	3	2	1	0
6	**Open Elective 7**	CE0625	CE/CS/IT	Android Programming	3	2	-	2
		AU0621	Auto	Intelligent Vehicle Technology	3	3	0	0

			Meta	Recycling of Materials	3	0	0	3
		EL0627	EL	Sensors and Actuators	3	3	0	0
		ME0545	Mech	Non-Conventional Energy sources	3	3	0	0
		CV0627	Cvl	Green Buildings	3	3	0	0
			SH	Graph Theory	3	2	1	0
7	**Open Elective 8**	CE0724	CE/CS/IT	Artificial Intelligence	3	2	-	2
		AU0721	Auto	Transport Management	3	3	0	0
			Meta	Selection of Materials and Failure Analysis	3	3	0	0
		EL0727	EL	Programmable Logic Control	3	3	0	0
		ME0657	Mech	Rapid Prototyping	3	3	0	0
		CV0728	Cvl	Public Transportation Systems	3	3	0	0
			SH	Artificial Neural Network and Soft Computing	3	2	1	0

7	**Open Elective 9**	CE0725	CE/CS/IT	Big Data & Business Analytics	3	2	-	2
		AU0722	Auto	Automobile Quantitative Techniques	3	3	0	0
			Meta	Non-Destructive Testing	3	3	0	0
		EL0728	EL	FACTS Devices	3	3	0	0
		ME0765	Mech	Introduction to Research	3	3	0	0
		CV0729	Cvl	Remote Sensing & GIS	3	3	0	0
			SH	Optimization Techniques	3	2	1	0

Open Electives offered by EC department

SEM	Open Elective	Subject Code	Offering Department	Subject		Teaching Scheme		
					Credits	Th.	Tut	Pr
1	Open Elective-1	EC0116	EC	Electronics Devices and Circuits	3	2	0	2
1	Open Elective-2	EC0117	EC	Electronics Simulation and Design Lab	3	2	0	2
2	Open Elective-3	EC0216	EC	Electronics Instrumentation	3	3	0	0
4	Open Elective-4	EC0421	EC	Signals & Systems	3	3	0	0
5	Open Elective-5	EC0422	EC	Modern Communication Trends	3	3	0	0
5	Open Elective-6	EC0524	EC	Digital Signal Processing	3	3	0	0
6	Open Elective-7	EC0623	EC	Digital Image Processing	3	3	0	0
7	Open Elective-8	ECO728	EC	Robotics	3	3	0	0
7	Open Elective-9	EC0729	EC	Pattern Recognition Techniques	3	3	0	0