			SITY	are : Smbosk heldule of Technolov Peosame Name : Bachelor of Technolov (Electronica and Telecomunication Essenserino)	
Color Code Descri	tion:		1		
Global	National / Loca	Regional / National			
Sr. No.	GA. No.	Graduate Attributes	PO No.	Programme Outcomes	Relevance
1	GAI	Scholarship: research, inquiry and lifelong learning	PO01	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	
2	GA1	Scholarship: research, inquiry and lifelong learning	PO02	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.	Regional /
3	GA4	Employability: equipped with skills, attributes, leadership and entrepreneurial qualities that society needs; being capable of making a contribution to society through earning a living	PO03	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.	Gobal
4	GA1	Scholarship: research, inquiry and lifelong learning	PO04	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions	
5	GA4	Employability: equipped with skills, attributes, leadership and entrepreneurial qualities that society needs; being capable of making a contribution to society through earning a living	PO05	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.	Regional /
6	GA2	Global citizenship: ethical, social and professional understanding	PO06	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice	
7	GA3	Eco-literate: sensitivity towards a sustainable environment	PO07	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.	Global
8	GA2	Global citizenship: ethical, social and professional understanding	PO08	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.	
9	GA4	Employability: equipped with skills, attributes, leadership and entrepreneurial qualities that society needs; being capable of making a contribution to society through earning a living	PO09	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.	Regional /
10	GA2	Global citizenship: ethical, social and professional understanding	PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	
11	GA1	Scholarship: research, inquiry and lifelong learning	PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.	National /
12	GA1	Scholarship: research, inquiry and lifelong learning	PO12	Life-long learning. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change	
13	GA4	Employability: equipped with skills, attributes, leadership and entrepreneurial qualities that society needs; being capable of making a contribution to society through earning a living	PO13	Demonstrate proficiency in development, design and analysis of electronic systems using advanced hardware and software tools in the domain of Electronics and Telecommunication Engineering.	
14	GA4	Employability: equipped with skills, attributes, leadership and entrepreneurial qualities that society needs; being capable of making a contribution to society through earning a living	PO14	Deploy conventional and advanced techniques' tools in diverse domains of Electronics and Telecommunication for the well-being of the society.	National /

Sr No	Somester	Institute Course Code	Catalog Course Code	Title	Course Outcome No	Course Outcome Statement	POAL	PO02	POB	POM	PO05	PO66	PO07	POIIS	PO09	POIA	POLL	PO12	POB	PO14
04.110.		institute Course Cour	Catalog Course Cour	Inc	COI COI	Apply successive differentiation to find nth derivative and the product of functions.	Strong-H	Moderate-M	Weak-L				-		-					
					02	Find limits of indeterminate forms and express the functions in the form of Taylor's and Maclaurin's	Strong-H	Moderate-M	Weak-L											
					CO3	Apply the concepts of partial differentiation to solve problems on homogeneous functions. Jacobians	Strong-H	Moderate-M	Moderate-M											
1	I	701230101	TE7680	Mathematics-I	CO4	Determine the rank of a matrix and solve system of equations.	Strong-H	Strong-H	Moderate-M											
					CO5	Find eigenvalues and eigenvectors of a matrix to diagonalize the matrix and apply Cayley-Hamilton	Strong-H	Moderate-M	Weak+L											
					CO6	Demonstrate the concepts of vector space and linear transformation with basis and dimension and	Strong-H	Moderate-M	Weak-L	-	-		-		-	-	-	-	-	-
					CO1	Calculate resonance frequency and impedance of given oscillating circuit.	Moderate-M	Moderate-M								-				
					CO2	Predict maxima or minima positions due to interference and diffraction.	Moderate-M	Weak-L	-							-		-		
2	I	701230102	TE7685	Physics for Electronics Engineers	CO3	Examine the functions of lasers and holograms and list their applications.	Moderate-M	Weak-L	-	-		-	-			-	-	-	-	-
					CO4	Distinguish between different types of solids, predict the occupation probability of energy levels in	Moderate-M	Weak-L	-			-	-			-	-	-		-
					CO5	Understand the effect of magnetic fields on current carrying conductors and understand concepts of	Moderate-M	Weak-L	-	-	-	-				-		-	-	-
					C01	Acquire ability to conduct, analyze and interpret experiments in Physics.	Moderate-M	Moderate-M	-	Strong-H					Moderate-M	Weak-L		-		-
3	I	701230103	TE7687	Physics Lab	C02	Demonstrate the required experimental skills of the given experiment.	Moderate-M	Moderate-M	-	Strong-H					Weak-L	Weak-L				
				-	003	Analyze the given/ obtained data and interpret the result.	Moderate-M	Moderate-M	-	Moderate-M					Weak-L	Weak-L		-		-
					004	Communicate ideas knowledge via verbal written means and demonstrate the understanding of	Moderate-M	WCak+L.	-	weak-t.					· ·	weak-L				
					001	Construct contracts of entirely using another and concluder:		-	-	-					Strong-H	Weak+L		-	-	-
4	т	701230104	TE7383	Communication Skills	002	Construct sentences effectively using grammar and vocabulary.			-	-	-		-		Strong-H Strong-H	Moderate-M		-	-	
		701230104	127565	Communication Skins	001	Apply atimatics in oral and written communication									Strong-H	Wenk-I				
					005	Demonstrate writing skills and use in business and technical corraspondence									Strong-H	Moderate-M				
					COL	Enhance ideas and concepts in the communication process well through vocabulary building. LSRW			-					Weak-L	Strong-H	Moderate-M				
					C02	Demonstrate linguistic competence- through accuracy in grammar, pronunciation									Strong-H	Moderate-M				
					003	Sketch creative side in formal as well as informal communication									Strong-H	Moderate-M				
5	I	701230105	TE7384	Communication Skills Lab	CO4	Employ etiquettes in oral and written communication									Strong-H	Weak-L				
					CO5	Modify listening skills.									Strong-H	Weak-L				
					CO6	Demonstarte articlation skills effectively while participating in Group discussions, debate or job								Weak-L	Strong-H	Weak-L				
					C01	Understand the basic concepts of C Programming for problem-solving, C data types, syntax and	Strong-H	Strong-H	Moderate-M	Moderate-M	Strong-H	Weak-L	Moderate-M	Moderate-M		-				
1		1			CO2	Understand the concept of Array and Strings to solve different problems			-	-	Strong-H		-					-	-	
6	I	701230106	TE7288	Programming in C	CO3	Understand the concepts of Function modules, its usage	-		-	-	2	-			Weak-L	Strong-H		Weak-L	-	
1					CO4	Understand the concepts of structures and unions: declaration, initialization and implementation					Moderate-M			Weak-L		Strong-H				.
		1			CO5	Understand the concepts of Pointers and memory allocation using Pointers			-	-					Weak-L	Weak-L		Weak-L	-	
		i			CO1	Understand the programming in IDE (Integrated Development Environment)	Moderate-M	Moderate-M	Moderate-M	-	-	-			-	-		Moderate-M	-	
		1			CO2	Interpret the programming tasks logically and understand making the pseudo-	Moderate-M	Moderate-M	Moderate-M	-	-							Moderate-M	-	
					CO3	Design and implement basic programming solutions including statements,	Moderate-M	Moderate-M	Moderate-M	-								Moderate-M	-	
7	I	701230107	TE7289	Programming in C Lab	CO4	Understand and apply the concept of Array and Strings to solve problem	Moderate-M	Moderate-M	Moderate-M									Moderate-M		
1		1			CO5	Understand and apply the concepts of structures and unions: declaration,	Moderate-M	Moderate-M	Moderate-M									Moderate-M		.
					CO6	Understand the concepts of Function modules, its usage and memory allocation	Moderate-M	Moderate-M	Moderate-M							-		Moderate-M		-
					C01	Understand the importance of right brain directed thinking complementing left brain directed	Weak-L	Moderate-M	-											
					CO2	Employ processes and methods of creative problem solving in real life problems	Weak-L	Moderate-M	-			Moderate-M								
8	I	701230108	T6873	Creative Thinking	CO3	Demonstrate creative and innovative thinking skills by the intersection of ideas from one field into		Moderate-M	-							Moderate-M				
				5	CO4	Explore various disruptive innovations and techniques in the field of Engineering												Strong-H		
					CO5	Discover the solutions to engineering problems provided by nature and mimic to apply in seeking			-				Moderate-M							
					CO1	Develop an understanding of the roles and responsibilities of an Electronic Engineer know the			-			Moderate-M	Weak-L			Weak-L		Weak-L		
				Introduction to Electronics &	CO2	Acquire knowledge about the different electronic components and tools.					Weak-L					Weak-L		Weak+L		
9	I	701230109	TE7787	Telecommunication Engineering	CO3	Understand the interdisciplinary approach and emerging trends in Electronic Engineering.							Weak-L			Weak-L		Weak-L		
					CO4	Explore case studies on the applications of Electronics & Telecommunications.			-				Weak-L			Weak-L	-	Weak-L		-
					CO1	Understand the basic operations on matrices in MATLAB.		-	-	-			-			-	-	-	-	-
					CO2	Create user define functions and write various scripts	-	-	-	-		-	-		-	-	-	-	-	-
10	I	701230110	TE7767	Computational Technique	CO3	Applying the knowledge to plot various 2-D and 3-D plots	-	-	-	-	-	-	-			-		-	-	-
		1			CO4	Solve ordinary differential equation using MATLAB	-	-	-	-					-	-	-	-	-	-
					C05	Develop a MATLAB program for a given application			-						-	-	-	-		-
					C01	Solve multiple integrals in cartesian coordinate system and understand different concepts of vector	Strong-H	Strong-H	Weak-L									-		
					CO2	Apply different tests of convergence to find the nature of infinite series.	Strong-H	Strong-H	Moderate-M			-								
		201220201	TE7691	M.A	CO3	Express the function in the form of Fourier series and half range Fourier series.	Strong-H	Strong-H	Strong-H						-	-		-		-
		/01230201	TE7681	Mathematics-II	CO4	Apply different methods for solving linear differential equations along with their engineering	Strong-H	Strong-H	Strong-H									-		
					CO5	Determine analyticity of a function of a complex variable, find the harmonic conjugate and discuss	Strong-H	Strong-H	Weak-L	-	-	-				-		-	-	-
					CO6	Evaluate complex line and contour integrals.	Strong-H	Strong-H	Weak-L			-				-		-		-
					CO1	Apply the knowledge of relevant laws and principles and familiarize with different theorems and	Moderate-M	Weak-L	-			-				-		-		-
12		701230202	TE7785	Fundamentals of Electrical &	CO2	Develop a clear understanding and acquire the knowledge of basic principles, working and	Moderate-M			Weak-L										
		701250202	111/100	Electronics Engineering	CO3	Understand basics of semiconductor physics, diode, Zener Diode and BJTs, their different	Moderate-M	-	-	Weak-L	-					-	-	-		-
L					CO4	Develop a clear understanding of batteries, its types and applications	Moderate-M	Weak-L	-	-	-		-			-		-	-	-
1					CO1	Understand the need of various safety precautions to be undertaken while working with electrical	Moderate-M	Weak-L	· · ·	Weak-L										· ·]
13		701230203	TE7786	Fundamentals of Electrical &	CO2	Appty the knowledge of relevant laws and principles and familiarize with different theorems and	Moderate-M	-		Weak-L	-		-			-		-	-	
		101230203	117700	Electronics Engineering Lab	CO3	Develop a clear understanding of the characteristics of basic semiconductor devices like, pn junction	Moderate-M		-	Weak-L	-		-			-		-	-	-
L					C04	Develop a clear understanding of batteries, its types and applications	Moderate-M	Weak-L	-	-	-	-				-		-	-	-
1		1			C01	Explain different terms and techniques, and solve numerical related to water treatment	Moderate-M	Weak-L							Strong-H					
		70127777		<i>c</i> i	C02	Explain different terms and techniques, and solve numerical related to water treatment	Strong-H	Weak-L	-	-	-				Strong-H	-		-	-	-
14	n	/01230204	11:/694	Cnemistry	03	explain and use the concepts related to various spectroscopic analysis techniques	Strong-H	weak+L	-	-					Strong-H	-			-	
		1			C04	Explain and use the concepts related to various spectroscopic analysis techniques	Strong-H	Weak+L	-	-					Strong-H	-		-	-	
L			l		005	Explain and use the basic concepts related to Green chemistry, environmental chemistry and	Strong-H Marda	Weak-L	-			Moderate-M								
1		1			001	repay we weoretical knowledge related to water analysis to practical use.	moderate-M	weak-L	-	-		atogerate-M				-			-	- · -
15	п	701230205	TE7695	Chemistry Lab	002	repare a polymer and determine the molecular weight of polymers.	moderate-M	Weak+L	-	-		moderate-M			-	-		-	-	
		1			003	identity the percentage of moisture and ash in huels samples.	Moderate-M	Weak-L	-	-		moderate-M	•			-		-	-	
L	<u> </u>				04	ounze naws or spectroscopy for spectroscopic analysis.	moderate-M	weak+L	-	-		atogerate-M				-		-	-	- · -
		1			001	Understand computational thinking concepts.	Strong-H	Strong-H	-	-					-			moderate-M	-	
16	п	701230206	TE7286	Programming & Problem Solving	002	Demonstrate rython programming concepts such as selection, repetition, list, tuples, and dictionaries.	Strong-H	Strong-H	-	-	moderate-M		•		Moderate-M	moderate-M		Moderate-M	-	
1		1			03	musicale runcions and modules.	Strong-H	Strong-H	-	-	stoderate-M				moderate-M	moderate-M		moderate-M	-	- · -
L	<u> </u>				04	imprement object-oriented programming concepts.	Strong-H	Strong-H	-	-	stoderate-M				-vioderate-M	moderate-M		moderate-M	-	
		1			001	Use nowcnarts and algorithms to represent simple computational problem.	Moderate-M	Moderate-M	Weak-L	-	moderate-M		•		-	moderate-M		Moderate-M	-	
		7012		Programming & Problem Solving	002	Solve proteins using conditionals and loops in Python.	Moderate-M	moderate-M	Weak-L	-	moderate-M					moderate-M		moderate-M	-	
17	ш	701230207	TE/28/	Lab	003	Approversion of the state of th	moderate-M	moderate-M	Moderate-M	-	moderate-M				-	moderate-M		moderate-M	-	
1		1			C04	Construct Fython program by using functions.	Moderate-M	Moderate-M	Moderate-M	-	Moderate-M		-		-	Moderate-M		Moderate-M	-	
—					cos	implement object-oriented programming concepts.	Moderate-M	Moderate-M	Moderate-M	-	moderate-M					moderate-M		woderate-M	-	
1		1			001	Understand and draw projections of points (0D) located in four quadrants	Weak-L	Weak+L	-	-					-	moderate-M			-	
18	п	701230208	T7925	Engineering Graphics Lab	C02	visualize, plan and draw projections of lines (1D) and planes (2D) (inclined to both planes of	Weak-L	Weak-L	-	-	-				-	Moderate-M		-	-	-
					C03	Visualize and draw projections of regular solids (3D) (inclined to both planes of projection) and	Weak-L	Weak-L	-	-	-					Moderate-M		-	-	-
					C04	visualize and communicate 3D regular/irregular shapes as 2D engineering drawings and vice versa	Weak+L	Weak-L	-			-				Moderate-M		-		-
		1			C01	Acquire better decisions based on logical thinking.		Moderate-M	Weak-L	Moderate-M	-				Weak-L	-		Moderate-M	-	-
19	п	701230209	T6732	Critical Thinking	C02	identity and evaluate racts in an argument.		wioderate-M	Weak+L	moderate-M	-		-		Weak-L	-	-	woderate-M	-	
					C03	Draw truth, ambiguity, vagueness and fallacy in arguments.		Moderate-M	Weak+L	Weak-L	-							Moderate-M	-	-
L	L				C04	Construct questions to reach conclusions.		Weak-L	Weak-L	Weak-L	-					-		Weak-L	-	· · ·
		1			001	Use Excel software for paste mathematical calculation.	Weak-L	Weak+L	Weak+L.	-	Weak-L			Strong-H	moderate-M	Weak+L		moderate-M	Weak+L	
20	п	701230210	TE7772	Data Analytics with Excel	02	Use excer for runctionality for data manipulation.	Weak-L	Weak-L	Weak-L	-	Weak-L			Strong-H	Moderate-M	Weak-L		Moderate-M	Weak-L	
	20 II	701230210			003	Use Excer for data visualization.	Weak-L	Weak+L	Weak+L	-	Weak-L			Strong-H	moderate-M	Weak+L		moderate-M	Weak+L	
└──	L	l			0.04	Use VBA script for automating the Excel operations.	Weak-L	Weak+L	Weak+L	-	Weak-L		-	Strong-H	moderate-M	Weak-L	-	woderate-M	Weak+L	Weak-L
1	1	1	1	1	C01	Relate fundamental concepts/laws of science and engineering	Moderate-M	Strong-H	Weak+L	-	-	-	-		Moderate-M	Moderate-M		Moderate-M	-	-

Sr. No.	Semester	Institute Course Code	Catalog Course Code	Title	Course Outcome No	Course Outcome Statement	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	POI0	POLL	PO12	PO13	PO14
					CO2	Practise pre-achieved skills on hardware and devices	Strong-H	Strong-H	Moderate-M						Moderate-M	Moderate-M		Moderate-M		
21	п	701230211	TE7300	Tinker Lab	C03	Take apart and reassemble and/or repairing of engineering gadgets	Strong-H	Strong-H		-									-	
					CO4	Explore various aspects of tinkered devices/instruments	Moderate-M	Moderate-M	Moderate-M	-	-	-			Moderate-M	Moderate-M	-	Moderate-M	-	-
					CO5	Design and make models out of creativity using raw material	Moderate-M	Moderate-M	Moderate-M	-					Moderate-M	Moderate-M		Moderate-M	-	
					C01	Derive Laplace and inverse Laplace transforms of the functions and solve the linear differential	Moderate-M	Moderate-M	Weak-L	-									-	
22	ш	701230301	TE7678	Matematical Transform	CO2	Calculate the Fourier and inverse Fourier transforms of the functions.	Moderate-M	Weak-L	Weak-L	-							-	-	-	-
				Techanique	CO3	Determine Z-transforms and inverse Z-transforms of the functions and, apply Z transforms to solve	Moderate-M	Weak+L	Weak-L	-							-	-	-	-
					C04	Discuss the concepts of wavelet transforms Write MATLAB code to find and visualized analyze and inversed analyze transforms and	Weak+L Moderate-M	Weak+L. Moderate-M	- Wask-I	-	- Moderate-M	-						-	-	-
				M	002	Compute and visualise the Fourier and inverse Fourier transforms of the functions using	Moderate-M	Work-I	Weak-I		Moderate-M									-
23	ш	701230302	TE7679	Techanique Lab	CO3	Determine and visualise Z- and inverse Z-transforms of the functions and apply Ztransforms to solve	Moderate-M	Weak-L	Weak-L		Moderate-M									
					CO4	Construct the MATLAB code for wavelet transforms	Weak-L	Weak-L	-	-	Moderate-M						-	-	-	
					CO1	Understand the mathematical description, representation and classification of signals.	Strong-H	Moderate-M	Weak-L	-	-						-	-	-	-
24		701230303	TE7083	Signals & Systems	CO2	Classify the systems based on their properties and determine the response of LTI systems using	Strong-H	Moderate-M	Weak-L	-							-		-	
24		701230303	11.7005	organis de oystems	CO3	Analyze Continuous-Time signals and systems in frequency domain using Fourier Series and Fourier	Strong-H	Moderate-M	Weak-L										-	
					CO4	Apply Fourier Series and Fourier Transform for analysis of Discrete-Time signals and systems in	Strong-H	Moderate-M	Weak-L	-							-		-	-
					C01	Apply the basics of working of the semiconductor devices and analyze the wave shaping circuits.	Strong-H	Moderate-M	-	-	Weak-L						-	-	Weak-L	-
25		701220204	TE7220	Electronic Desires & Comits	02	Understand the construction, working and operation FE1 transistor and its different circuit	Strong-H	Strong-H	-	-	Weak-L								Weak+L.	-
25		701230304	11:7320	Electronics Devices & Circuits	C04	Analysis of MOSEET configurations as a small signal appelitor	Strong-H	Moderate-M			Weak-L								Weak-L Weak-I	
					C05	Analysis of victor 11 comparations as a small signal uniprice. Analysis and Classification of feedback amplifiers, analysis of various negative feedback amplifiers.	Strong-H	Moderate-M			Weak-L								Weak-L	-
					C01	Analyze basic wave shaping circuits.	Strong-H	-	-	-	Moderate-M								Moderate-M	
				11 D	CO2	Study and understand characteristics of JFET and MOSFET.	Strong-H	Moderate-M	-	-	Moderate-M								Moderate-M	
26	ш	701230305	TE7321	Electronics Devices & Circuits	CO3	Investigate the performance of BJT and JFET amplifier circuits.	Strong-H	Moderate-M	-	-	Moderate-M						-		Moderate-M	-
					CO4	Understand the working principle and analyze the performance of feedback	Strong-H	Moderate-M		-	Moderate-M								Moderate-M	
					CO5	Understand the working of LC oscillator and CMOS Inverter	Strong-H	-	-	-	Moderate-M						-		Moderate-M	-
					CO1	Apply Network Theorems to find specific parameters.	Strong-H	Moderate-M	-	-							-	-	-	-
27		701220206	TE7226	Natural: Thomas	002	Analyze the network and find resonance frequencies of series and parallel REC.	Strong-H	Moderate-M	Weak+L Wark-1	-				-	-	-			-	<u> </u>
		/01230300	11.7330	ivetwork fileory	004	Identify single port and two-port networks and find network parameters	Strong-H	Moderate-M	Weak+L	-	<u> </u>									+
1		1			C04	Make use of Network functions to Synthesis Foster and Cauer form	Strong-H	Moderate-M	Weak-L		<u> </u>								-	
				1	COI	Understand static and dynamic characteristics of measuring systems.	Moderate-M	Moderate-M										Weak-L		-
20		701220207	7777722		C02	Identify various electronics measuring instruments.	Moderate-M	Moderate-M	-	-	-							Weak-L		-
28		701230307	TE/322	Electronic Measurements Lab	CO3	Get hands-on transducers and sensors working.	Moderate-M	Moderate-M		-								Weak-L	-	-
					CO4	Utilize Labview/Simulink capacity for basic measuring system design (CRO, temperature	Moderate-M	Moderate-M			Weak-L							Weak+L		-
					C01	Understand number systems, logic gates and Boolean algebra.	Weak-L	Moderate-M	Moderate-M	-							-	-	-	-
					CO2	Apply the knowledge of logic gates to identify and analyze combinational circuits and design	Strong-H	Moderate-M	Strong-H	Moderate-M							-		-	-
29	- 111	701230308	TE/7/3	Digital Circuits and Logic Design	003	Design sequential logic circuits like counters and registers with the knowledge of flip-flops.	Weak-L	Moderate-M	Moderate-M	Moderate-M							-	-	-	-
					04	Design Mealy and Moore synchronous sequential circuit's models.	Weak-L	Weak+L	Moderate-M	Moderate-M									Weak+L	- West I
					C01	Compare different logic families, memories on several parameters.	Strong-H Weak-L	- Moderate-M	- Moderate-M										-	weak-t.
					C02	Comprehend the practical applications of multiplexers and Demultiplexers in digital systems.	Strong-H	Moderate-M	Strong-H	Moderate-M										
30	ш	701230309	TE7774	Digital Circuits and Logic Design	CO3	Analyzing the functionality of code converters, comparators, and Binary-Coded Decimal (BCD)	Weak-L	Moderate-M	Moderate-M	Moderate-M									-	
				Lao	CO4	Implementation of both Up and Down Synchronous and Asynchronous Counters using Flipflops	Weak-L	Weak+L	Moderate-M	Moderate-M							-	-	Weak-L	-
					CO5	Analyze the role of flip-flops in a Decade Counter configuration	Strong-H	-	-	-							-		-	Weak-L
					CO1	Understand and implement the basic syntax of C++ programming language like variables, operators,	Moderate-M	Moderate-M		-								Weak+L	-	
31	ш	701230310	F7065	C++ and Data Structures	CO2	Demonstrate the implementation of object-oriented programming concepts by creating a simple class	Moderate-M	Moderate-M	-	-	-	-		-			-	Weak+L	-	-
					003	Explain the principles benind function and operator overloading in C++. Describe now	Moderate-M	Moderate-M	-	-	-						-	Weak-L	-	-
					C04	Understand and apply the concepts of data structures for various applications.	Moderate-M	Moderate-M	-	-	weak-1.					- Moderate-M		WCRK+L. Moderate-M	-	-
		701230311			C02	Form simple sentences and list the numbers as per the German language										Moderate-M		Moderate-M		-
32	ш		T6184	Basic German I	C03	Write the answers in German language.										Moderate-M		Moderate-M		
					CO4	Communicate in German language.		-	-	-	-					Moderate-M	-	Moderate-M	-	-
					CO1	Greet & introduce in French language		-	-	-						Moderate-M	-	Moderate-M	-	
33	ш	701230312	T6186	Basic French I	CO2	Form simple sentences and list the numbers as per the French language.		-	-	-						Moderate-M		Moderate-M	-	
					CO3	Write the answers in French language.	-	-	-	-	-	-		-		Moderate-M	-	Moderate-M	-	
					C04	Communicate in French language.	-	-	-	-						Moderate-M	-	Moderate-M	-	-
					002	Formulate mathematical representations for diverse control systems.	Strong-H Strong-H	Moderate-M Strong-H	Work-I	-	Strong-H Strong-H							Weak-L Weak-I	Moderate-M	-
34	IV	701230401	TE7770	Control System	C03	Perform transient analysis of systems in the time domain.	Strong-H	Moderate-M	Weak-L		Strong-H							Weak-L	Moderate-M	
					CO4	Analyze stability in the time domain using Routh's criterion and systems characteristics using the	Strong-H	Moderate-M	Moderate-M		Strong-H							Weak-L	Moderate-M	
					CO5	Analyze stability in the frequency domain through the interpretation and utilization of Bode plots.	Strong-H	Moderate-M	Moderate-M	-	Strong-H	•						Weak+L	Moderate-M	-
					CO1	Familiarization with control system tool box using MATLAB and simulink	Strong-H	Moderate-M	Moderate-M		Strong-H							Weak-L	Moderate-M	-
					CO2	Apply the Time Domain response of first order systems.	Strong-H	Strong-H	Weak-L		Strong-H							Weak+L	Moderate-M	-
35	IV	701230402	T7548	Control System Lab	C03	Analyze the Time Domain response and steady state error of second order systems.	Strong-H	Moderate-M	Weak-L	-	Strong-H							Weak+L	Moderate-M	· ·
1					04	Perform the effect of stability on closed loop response and its characteristics.	Strong-H	Moderate-M	Moderate-M	-	Strong-H							Weak-L	Moderate-M	<u> </u>
				+	01	Apply vector calculus expressions to understand the behaviour of static electric and manuatic fields	Strong-H Moderate-M	Moderate-M	woderate-M		Strong-H		<u> </u>					weak+L	moderate-M	
1					C02	Determine the electric field from the stationary charge distribution and derive expressions for electric	Moderate-M	Strong-H	Moderate-M											1
36	IV	701230403	TE7780	Electromagnetic Field Theory	CO3	Determine the magnetic fields from steady current distributions and derive expressions for magnetic	Moderate-M	Strong-H	Moderate-M	-										-
					CO4	Explain the physical meaning of Maxwell's equations and illustrate their application to analyze	Moderate-M	Strong-H	Moderate-M	-	-	•						-	-	-
					CO5	Derive the expression for the propagation, reflection and transmission of plane waves.	Moderate-M	Moderate-M			Weak-L								Moderate-M	
					CO1	Explain the characteristics and functionality of the Operational Amplifier.	Moderate-M	Moderate-M		-								-	Weak-L	-
					CO2	Design circuits with op-amps for different applications.	Moderate-M	Strong-H	Moderate-M	Weak-L	Strong-H						-	-	Weak+L	-
37	IV	701230404	TE7084	Analog Circuit Design	C03	Interface multiple op-amps to get the desired application.	Moderate-M	Strong-H Mada	Moderate-M	Weak-L	Strong-H							-	Weak-L	<u> </u>
					004	Explain the usage of different voltage regulator ICs	Moderate-M	Moderate-M	Weak+L.	weak-t.	Moderate-M								Weak+L.	+
				-	COL	Identify the op-amp configuration based on specifications.	Moderate-M	Weak-L	-	-	Moderate-M		<u> </u>						Strong-H	-
30		701220405	7777		CO2	Design a circuit using IC 741 for a specific application.	Moderate-M	Moderate-M	Moderate-M	Weak-L	Strong-H							-	Strong-H	
58	IV	701230405	17536	Analog Circuit Design Lab	CO3	Mount and test designed op-amp-based circuit.	Moderate-M	Moderate-M	Weak-L	Weak-L	Strong-H	· ·					-	-	Strong-H	-
					CO4	Understand the significance of theoretical results and also observe and verify the results.	Moderate-M	Moderate-M		Weak-L	Weak-L			· ·		-		Weak-L	Strong-H	
					CO1	Understand the Need of modulation, modulation processes and different amplitude	Strong-H	Moderate-M	Moderate-M								-	-		
39	IV	701230406	TE7425	Principles of Communication	CO2	Analyze generation and detection of FM signal and compare between amplitude and	Strong-H	Moderate-M	Moderate-M		· ·	· ·	· ·							· -
					C03	Sample analog signal and recover the original signal without any distortion and differentiate between	Strong-H	Moderate-M	Moderate-M	-	· ·	· ·	· ·	· ·						
				+	C04 C01	Simulate AM ret up to explain the concent of modulation	Strong-H Moderate M	Moderate-M	stoderate-M		- Moderate, M	<u> </u>						- Wask-I	- Moderate M	+
					002	Design SSB modulation and understand the nower control of this scheme	Moderate-M	Moderate-M	Weak-L		Moderate-M		<u> </u>					Moderate ₂ M	Moderate-M	Moderate-M
40	IV	701230407	TE7029	Principles of Communication	C03	Simulate FM set up to explain the concept of modulation	Moderate-M	Moderate-M			Moderate-M							Weak-L	Moderate-M	
				Lab	C04	Sample analog signal and recover the original signal without any distortion.	Moderate-M	Moderate-M	-	-	Moderate-M							Moderate-M	Moderate-M	Moderate-M
					CO5	Simulate and observe the concept of PCM.	Strong-H	Moderate-M		-	Moderate-M							Weak-L	Moderate-M	-
					C01	Explain concepts of entrepreneurship	Weak-L	-		-		Strong-3						Weak-L		
41	IV	701230408	T2646	Entrepreneurship Venture	CO2	Identify entrepreneurship opportunities and understand various funding means			-	-		Moderate-M		Weak-L			Strong-3	Weak+L		
1					C03	Apply steps to form an organization		Weak-L		Weak-L	Weak-L	· ·			Moderate-M		Strong-3		-	Moderate-M
L					C04	Destining in the community related estimates		weak+L	moderate-M	weak-L	weak-L	- Madamta M	- Madamta M		Moderate-M	e Sterme H	Strong-3	- Madamta M		Moderate-M
1				1	001	Think discuss and implement their asperiences		-	-	+ -	Moderate-M	Strong U	Moderate-M	<u> </u>	Suong-H	Strore U		Moderate M	-	
42	IV	701230409	T8000	Service Learning	002	rinna, uncoso and impeditent then experiences					-rioueraie+M	Suoug-ri	-+touctate-M	· · ·		auoug•n		-HOUCEARC-M	-	

Sr. No.	Semester	Institute Course Code	Catalog Course Code	Title	Course Outcome No	Course Outcome Statement	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	POII	PO12	PO13	PO14
42	1V	/01230409	1 8000	Service Learning	CO3	Apply skills and knowledge in real life situations					Moderate-M	Strong-H	Moderate-M		Weak-L	Strong-H		Moderate-M		Moderate-M
					CO4	Inculcate sense of caring					Moderate-M		Moderate-M		Strong-H		-	Moderate-M	-	-
					CO1	Understand the need of various hardware components for electronic systems.	Moderate-M	Moderate-M	-	-	-	-					-	-	-	-
		201220410	17073	Hardware Interfacing and Sensor	CO2	Understand the architecture of microprocessor and microcontroller	Moderate-M	Moderate-M	Weak-L		Moderate-M							-	Moderate-M	
43	14	/01230410	1/0/3	Integration	CO3	Investigate various sensor types and their applications	Moderate-M	Moderate-M	Weak-L		Moderate-M						-		Moderate-M	-
					CO4	Demonstrate sensor interfacing with Microcontroller	Moderate-M	Moderate-M	Weak-L	-	Moderate-M						-	-	Moderate-M	-
					COI	Understanding basic concepts of Philosophy		-	-	-		Weak-I.			-		-	Weak-L	-	-
					002	Understand classification of Schools of Indian Philosophy Understand minimum of New Yorks Schools of Indian Philosophy		-				Weak-L					-	Weak-L	-	-
44	IV	701230412	T6760	Introduction to Indian Philosophy	004	Understand principals of Volic Schools of Indian Philosophy				-		Weak-I			-			Wenk-L	-	-
					005	Understand the way of life recommended by Vedic schools of Indian Philosophy						Weak-L						Weak-L		
					CO6	Understand the way of life recommended by Non-Vedic schools of Indian Philosophy				-		Weak-L						Weak-L	-	
					CO1	Introduce concepts of ethics: meaning, definition, nature, need, good, right, value, duty, justice.		-	-	-		Moderate-M		Strong-H	-		-	Weak-L	-	-
45	IV	701230413	T6872	Foundation of Ethics	CO2	To learn and understand the concepts of Dharma, Artha, Kama, Moksha, Western approaches to		-	-	-	-	Moderate-M		Strong-H	-		-	Weak-L	-	-
					CO3	To understand ethics in business and profession, ethical dilemma and ways to solve them		-		-		Moderate-M		Strong-H				Weak-L	-	-
					CO1	Define Discrete Time (DT) signals and perform various operations on DT signals	Moderate-M	Moderate-M	-	Weak-L	-	-			Weak-L	-	-		-	-
					CO2	Describe the concept of sampling and aliasing	Moderate-M	Weak-L	-	Weak-L		-			Weak-L		-	-	-	-
46	v	701230501	T7558	Digital Signal Processing	003	Analyze discrete time signals and systems using different transforms such as Z- transform and	Moderate-M	Moderate-M	Weak-L	Weak-L					Weak-L			-	-	Weak-L
					005	Understand multirate campling and Digital Signal Processing (DSP) processor	Moderate-M	Moderate-M	Moderate-M	Wenk-I					Moderate-M			Wenk-I	Moderate-M	Moderate-M
					C05	Apply the concepts of DSP in speech and image processing	Moderate-M	Weak-L	inouclate-in	Weak-L	Weak-L	Moderate-M	-	-	Weak-L			Weak-L	Weak-L	Weak-L
					CO1	Demonstrate sampling of signals and aliasing	Strong-H	Strong-H	Weak+L	-	Moderate-M								-	-
17		701230502	77550	D: 510: 10	CO2	Evaluate the system response using convolution sum and DFT-IDFT method	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M	-			-	-	-	-	-	-
4/	v	/01230502	1/559	Digital Signal Processing Lab	CO3	Apply the knowledge of Z- transform for solution of difference equation	Strong-H	Strong-H	Moderate-M	Weak-L	Moderate-M				-	-	-	-	-	-
					CO4	Design and implement IIR and FIR filters using different techniques	Strong-H	Strong-H	Strong-H	Moderate-M	Moderate-M						-			-
					CO1	Simulate AM and FM set up to explain the concept of modulation.	Strong-H	Moderate-M	Moderate-M	-							-		-	-
48	v	701230503	TE7425	Principls of Communication	CO2	Sample analog signal and recover the original signal without any distortion.	Strong-H	Moderate-M	Moderate-M	-		-			-		-	-	-	-
					003	Design SSB modulation and understand the power control of this scheme.	Strong-H	Moderate-M	Moderate-M				•			•	-		-	-
					001	Simulate and observe the concept of PCM.	Moderate-M	Moderate-M	Moderate=M	-	Moderate-M	-			-			Wask-I	- Moderate-M	-
1	1	1			CO2	Design SSB modulation and understand the power control of this scheme.	Moderate-M	Moderate-M	Weak-L		Moderate-M							Moderate-M	Moderate-M	Moderate-M
49	v	701230504	TE7029	Principls of Communication Lab	C03	Simulate FM set up to explain the concept of modulation	Moderate-M	Moderate-M		-	Moderate-M	-			-			Weak-L	Moderate-M	-
	1				CO4	Sample analog signal and recover the original signal without any distortion.	Moderate-M	Moderate-M		-	Moderate-M							Moderate-M	Moderate-M	Moderate-M
		<u> </u>			CO5	Simulate and observe the concept of PCM.	Strong-H	Moderate-M	-	-	Moderate-M							Weak-L	Moderate-M	
	1	1			CO1	Classify the signals and their spectra based on various parameters.	Strong-H	Moderate-M	Weak-L									Weak-L		
					CO2	Explain the generation and detection of base band system.	Strong-H	Strong-H	Weak-L	-	-	-			-	-	-	Weak-L	-	-
50	v	701230505	TE7316	Digital Communication	CO3	Describe the performance of line codes and methods to mitigate inter symbol interference.	Strong-H	Strong-H	Weak-L								-	Weak-L	-	-
					004	Explain the generation and detection of band pass signals	Strong-H	Strong-H	Weak-L	-		-			-		-	Weak-L	-	-
					001	Describe the various spread spectrum techniques	Strong-H	Strong-H	weak+L	-	- Week I	-						weak+L	-	-
					002	Execute sampling for the given input signals Perform the generation and detection of base band system	Strong-H	Moderate-M			Weak-L									
51	v	701230506	T7552	Digital Communication Lab	CO3	Implement the concepts of PWM and PPM modulations	Strong-H	Moderate-M			Weak-L									
				5	CO4	Perform various bandpass digital modulation techniques like ASK, FSK and PSK	Strong-H	Moderate-M			Weak-L								-	
					CO5	Simulate different source coding and spread spectrum techniques.	Strong-H	Moderate-M			Weak-L								-	
					CO1	Describe the fundamental principles of probability theory and its application.	Strong-H	-	-	-						-	-	Strong-H	-	-
52	v	701230507	TE7174	Probability, Random Variables	CO2	Apply probability concepts to analyze and solve problems involving random variables.	Strong-H	Moderate-M		-							-	Weak-L	-	-
				and Stochastic Process	CO3	Explain the concepts and properties of random processes.	Strong-H	Moderate-M	-	-	-	-		-	-	-	-	Weak-L	-	-
			-		C04	Analyze and evaluate the response of linear systems to random signals using appropriate	Strong-H	Moderate-M	-			-			-			Weak-L	-	-
					002	Apply knowledge and critical thinking skills to solve identified problems	Moderate-M	Moderate-M	Moderate-M	-	- Moderate-M	Moderate-M			Strong-H	- Moderate-M		- Wask-I	Moderate-M	Moderate-M
53	v	701230508	TE7291	Project Based Learning-II	003	Analyse the best solution/idea by using ontimized and latest tools/software's available	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M					-	Moderate-M	incak-t.	Moderate-M	Moderate-M
				ridjeet bake teaming-it	CO4	Evaluate and exhibit an idea	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M					Moderate-M	-	Moderate-M	Moderate-M	Moderate-M
					CO5	Develop research skills	Moderate-M	Moderate-M	Moderate-M	-	Moderate-M	-		Moderate-M		-	-	Moderate-M	Moderate-M	Moderate-M
					CO1	Explain the concepts and terminologies of microcontroller and microprocessor.	Moderate-M	Moderate-M		-						-	-	Moderate-M	-	-
54	v	701230509	F7026	Microcontrollers and	CO2	Describe the working and instruction set of 8051 microcontrollers.	Moderate-M	Moderate-M		-	Weak-L						-	-	Weak-L	-
			17020	Applications	CO3	Explain PIC18F microcontroller architecture.	Moderate-M	Moderate-M		-		-		-	-	-	-		-	-
					CO4	Interface input and output devices with microcontroller. To Understand and Amelo Davies Thinking Americal Instances in Summer Clabel Summir for	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M				Weak-L	Weak-L	-	Moderate-M	Strong-H	Weak-L
					002	To Learn & Develon Mindret Attitude and 21et Century Skills as a problem solver and innovator	Strong-H Strong-H	Moderate-M	Strong-H Strong-H		- Strong, H	-		-	Strong-H Strong-H	Strong-H	-	Moderate-M	Strong-H Strong-H	Moderate-M
55	v	701230510	T6749	Design Thinking	003	To Observe and Investigate the real and hidden needs of the user for complex problem scenario and	Strong-H	Moderate-M	Strong-H	- Moderate-M	Strong-H				Strong-H	Strong-H		Moderate-M	Strong-H	Moderate-M
					CO4	To Evaluate the ideas and Create Prototyping and Iterative Mindset for successful product	Strong-H	Moderate-M	Strong-H	Moderate-M	Strong-H	-			Strong-H	Strong-H		Moderate-M	Strong-H	Moderate-M
					CO1	Explain the fundamental parameters of an antenna.	Strong-H	Weak-L		-		-		-			-	-	Weak-L	-
					CO2	Derive the Radiation Integrals and Auxiliary Potential Functions	Strong-H	Moderate-M	Weak-L	-							-		-	-
56	v	701230511	TE7090	Antenna and Wave Propagation	CO3	Understand the concept of arrays and array factor	Strong-H	Moderate-M	Moderate-M	-							-	-	Moderate-M	-
					CO4	Explain the different types of antennas and their characteristics	Strong-H	Moderate-M	Moderate-M	-		-		-	-	-	-	-	Moderate-M	-
			-		005	Describe the various modes of propagation of EM waves.	Moderate-M	Weak-L	Weak-L										-	-
1	1	1			001	Describe the working of ac to dc and dc to ac converters	Moderate-M	Moderate-M												1
57	v	701230513	TE7085	Power Electronics	CO3	Describe the working of dc to dc and ac to ac converters and power controller	Moderate-M	Moderate-M												
1	1	1			CO4	List and brief the application of power electronics devices	Strong-H	Moderate-M	Moderate-M											
					CO1	Measure the fundamental parameters of an antenna system.	Moderate-M	Strong-H	-	-	Moderate-M						-	-	Moderate-M	
58	v	701230517	TE7091	Antenna and Wave Propagation	CO2	Simulate different types of planar antennas and study its radiation pattern	Strong-H	Strong-H			Moderate-M								Moderate-M	
- 20	ľ ľ	/01230314	11.7091	Lab	CO3	Explain the radiation pattern of an antenna array system.	Strong-H	Strong-H	-	-	Moderate-M							-	Moderate-M	-
	+	+			CO4	Simulate different types of wire & aperture antennas and study its radiation pattern	Moderate-M	Strong-H			Moderate-M								Moderate-M	· ·
1	1	1			001	Demonstrate pastic knowledge of power electronic devices	Moderate-M	Moderate-M		-									-	· ·
59	v	701230516	T7583	Power Electronics Lab	002	Perform experiments on AC-DC and DC-AC converting	Moderate-M	Moderate-M								-			-	<u> </u>
	1	1			C04	Perform experiments on DC-DC and AC-AC converters and nower controllers	Moderate-M	Moderate-M	-											<u> </u>
	+	1			COL	Describe how behavior affects the organizational performance and effectiveness	M					Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M		-
1	1	1			CO2	Identify the factors affecting individual behavior at work place.						Moderate-M	Strong-H	Strong-H	Moderate-M	Moderate-M	Moderate-M	Moderate-M		· ·
		201220515	77605	0	CO3	Demonstrate the importance of team dynamics in organizations.						Strong-H	Strong-H	Strong-H	Strong-H	Moderate-M	Moderate-M	Moderate-M		
60	v	701230518	12585	Organizational Behaviour	CO4	Appreciate the differences in organizational cultural values.	-					Moderate-M	Strong-H	Strong-H	Moderate-M	Strong-H	Moderate-M	Moderate-M		-
1	1	1			CO5	Distinguish between the characteristics of managers and leaders.	-					Moderate-M	Strong-H	Strong-H	Moderate-M	Strong-H	Moderate-M	Moderate-M		-
	-				CO6	Understand and apply the knowledge of individual differences at workplace.						Moderate-M	Strong-H	Strong-H	Moderate-M	Strong-H	Moderate-M	Moderate-M		· · ·
1	1	1			C01	Explain computer network concepts and network models.	Strong-H	Strong-H	Moderate-M	-	•					•		-	Moderate-M	· ·
61	VI	701230601	T7908	Computer Networks	002	Describe physical layer functions and data link layer protocols.	Weak-L	Strong-H	Strong-H										Moderate-M	· ·
1	1	1			004	Cassing in addressing and explain protocols at network layer and transport layer.	Work-J	Strong-H Strong-F	Strong-H	-								-	Weak-L	<u> </u>
	1	+	1	t	C01	Explain the networking devices.	Moderate-M	Weak-L			Strong-H				-				····dk+L	1
		70127777			CO2	Troubleshoot networking problems using various techniques.	Moderate-M	Moderate-M		Weak-L	Strong-H								-	
62	VI	701230602	1 7482	Computer Networks Lab	CO3	Analyze packet capturing of various protocols by using Wireshark tool.	Moderate-M	Weak-L	-	Weak-L	Strong-H						-	-	-	-
		1			CO4	Simulate network optimization and traffic shaping algorithms.	Moderate-M	Moderate-M	Strong-H	Moderate-M	Strong-H	Strong-H						Moderate-M	Strong-H	Strong-H
					CO1	Develop skills specific for collaborative work to identify the problems in society/Industry	Moderate-2	Moderate-2				Moderate-2			Strong-3				Moderate-2	Moderate-2
					CO2	Apply knowledge and critical thinking skills to solve identified problems.	Moderate-2	Moderate-2	Moderate-2		Moderate-2					Moderate-2		Weak-L	Moderate-2	Moderate-2
63	VI	701230603	T7802	Project Based Learning-III	C03	Analyse the best solution/idea by using optimized and latest tools/software's available.	Moderate-2	Moderate-2	Moderate-2	Moderate-2	Moderate-2		· ·				Moderate-2	· ·	Moderate-2	Moderate-2
1	1			1	004	Evaluate and exhibit an idea	Moderate-2	Moderate-2	Moderate-2	Moderate-2	Moderate-2		· ·			Moderate-2		Moderate-2	Moderate-2	Moderate-2

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Sr. No.	Semester	Institute Course Code	Catalog Course Code	Inc	Course Outcome No	Course Outcome Statement	POUL	PO02	PO05	P004	roos	P006	P00/	PO08	P009	POID	POIL	POI2	POIS	P014
					005	Develop research skills	Moderate-2	Moderate-2	Moderate-2		Moderate-2			Moderate-2				Moderate-2	Moderate-2	Moderate-2
					CO1	Specify electronics active and Passive components	Moderate-M	Moderate-M	Moderate-M	-	-	-			Moderate-M		-	Weak-L	Moderate-M	Moderate-M
61	VI	701230604	TE7426	Electronics Devien Workshop	CO2	Follow rigorous methodical approach to design PCB.	Moderate-M	Strong-H	Strong-H	Moderate-M	Moderate-M	-			Moderate-M		-	Moderate-M	Moderate-M	Moderate-M
04		70120004	11.7420	Electronics Design Workshop	CO3	Analyze the working of pcb developed	Moderate-M	Strong-H	Strong-H	Moderate-M	Moderate-M	-	· ·		Moderate-M		-	Moderate-M	Moderate-M	Moderate-M
					CO4	Analyze the results obtained from Project.	Moderate-M	Strong-H	Strong-H	Moderate-M	Moderate-M				Moderate-M		-	Moderate-M	Moderate-M	Moderate-M
					CO1	Develop the ability to participate effectively in competitive exams.	Strong-H	Strong-H	-								-		-	-
					CO2	Demonstrate technical skills during the placements and life long learning.	Strong-H	Strong-H	-			-				Weak-L	-	Moderate-M	-	-
65	VI	701230605	17802	Capstone Course	CO3	Develp communication skills and personality trades to address personal, professional, and socital		-	-	-		-				Moderate-M	-	Moderate-M	-	-
					CO4	Equip required skills as per Industry needs.	Strong-H	-	-	-							-	Moderate-M	-	-
					CO1	Explain the basics of principles of economics.						Moderate-M					Moderate-M		-	
					CO2	Develop an understanding of how data is collected and analyzed and theory is formulated						Weak-L					Moderate-M			
66	VI	701230606	T6774	Principle of Economics	003	Knowing the behavior of consumers and producers and characteristics of different market structure						Weak-L					Moderate-M	Moderate-M		
					004	Understanding the macroscopomic variables			-			Weak-I					Moderate-M	Moderate-M		-
					001	De 2 d Martine de 1872 de 1873						WCdA-L					Moderate-M	Moderate-M		
					001	Describe the v1.51 design now and versiog modelling styles	Moderate-M	Moderate-M	Moderate-M		Moderate-M								Moderate-M	-
67	VI	701230607	F7058	Digital Design with Veilog	02	Develop the code for combinational and sequential circuits in verilog HDL	Moderate-M	Strong-H	Moderate-M		Moderate-M								Moderate-M	
					003	Implement Mealy and Moore finite state machines using Verilog HDL	Moderate-M	Strong-H	Moderate-M		Moderate-M						-		Moderate-M	-
					CO4	Describe the architecture of Programmable Logic Devices and digital design flow using FPGA	Moderate-M	Weak-L	-	-	Moderate-M	-				Moderate-M	-	-	Moderate-M	-
					CO1	Explain transmission lines.	Strong-H	Moderate-M	Weak-L	-	-	-					-	-	-	-
					CO2	Describe waveguide propagation.	Strong-H	Moderate-M	Weak-L			-					-		-	-
60	M	701220608	17590	Minerry & Barley	CO3	List the characteristics of passive microwave devices.	Strong-H	Moderate-M	Weak-L								-			-
08	*1	701230008	17580	Microwaves & Radai	CO4	Describe the working of microwave tubes.	Moderate-M	Weak-L	-								-		-	-
					CO5	Write the working principle of solid state microwave devices.	Moderate-M	Weak-L	-			-					-		-	-
					CO6	Compare different types of radars.	Moderate-M	Moderate-M	Weak-L										Weak-L	-
					CO1	Memorize the key components of an embedded system, such as microcontrollers, sensors, and	Moderate-M	Moderate-M	Moderate-M		Strong-H							Weak-L	Moderate-M	Weak-L
					CO2	Describe the ARM architecture	Moderate-M	Weak-L	Weak-L		Moderate-M							Weak-L	Moderate-M	Weak-L
					002	Remanize different communication protocols supported by advance processors for communicating	Madamta M	Work I	Week I		Sterme U							Week I	Madamia M	Week I
69	VI	701230610	TE7427	Embedded Syastem Design	004	Identify the loss summers on a constant protocol supported by advance processors for communicating	Moderate-M	Weak-L	Weak I		Strong-H							Weak I	Moderate-M	Weak-L
					004	recently the key components of an operating system.	Moderate-M	Moderate-M	weak+L		Strong-ri							weak+L	Moderate-M	weak-t.
					005	Explain the concept of real-time scheduling and its significance in an RTOS.	Moderate-M	weak+L		weak-t.			•					weak-L		
					0.06	Analyze various examples or embedded systems.								-						
1	1	1	1	1	01	Demonstrate understanding of basic concepts of image acquisition, sampling and quantization	Moderate-M	Moderate-M	-	1	1								Moderate-M	Moderate-M
	1	1	1	1	CO2	Demonstrate understanding of fundamental image manipulations in spatial domain	Moderate-M	Moderate-M	Weak-L	Weak-L	Moderate-M			· ·			-		Weak-L	Moderate-M
70	VI	701230611	TE7088	Digital Image Processin-	CO3	Analyze an image in Fourier domain	Moderate-M	Moderate-M	Weak-L	Weak-L	Moderate-M						-	-	Moderate-M	Moderate-M
70	*1	701230011	11.7088	Digital Image Flocessing	CO4	Apply morphological operations for image enhancement	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M						-		Moderate-M	Moderate-M
					CO5	Explain concepts in image segmentation	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M						-		Moderate-M	Moderate-M
					CO6	Describe basic issues and the scope of image processing in various applications	Moderate-M	Moderate-M	-	Moderate-M	Moderate-M	-			-		-	-	-	-
					CO1	Understand principle of MOS operation and the trade-offs involved in the transistor level design	Moderate-M	Moderate-M	Moderate-M		Strong-H							Weak-L	Moderate-M	Weak-L
					CO2	Study the different design parameters involved in CMOS logic design	Moderate-M	Weak-L.	Weak-L		Moderate-M							Weak-L	Moderate-M	Weak-L
71	VI	701230612	TE7315	Digital CMOS VLSI Design	CO3	Study of different fabrication process involved in CMOS technology real world environment.	Moderate-M	Weak-L	Weak-L		Strong-H							Weak-L	Moderate-M	Weak-L
					C04	Analyzis and design of sequential and combinational logic circuits	Moderate-M	Moderate-M	Wask-I		Strong-H							Wask-I	Moderate-M	Wenk-I
					001	Understand temperature of minerance through meanwhile	Madamta M	Work I	Week I	-	Shong-11	-		Wents I		Wash I	-	meak-r.	moderate-m	TTCUK-L.
					001	Empirimentally dataming the elementaristics of learn enterna	Moderate-M	Weak-L	weak+L					Weak-L		Weak+L.			wineh I	
72	VI	701230613	T7579	Microwave & Radar Lab	002	Experimentally determine the characteristics of normalitema	Moderate-M	Weak+L						Weak-L		Weak+L.			weak+L	
					03	Experimentally determine the characteristics of a microwave source	Moderate-M	Weak-L	-	-		-		Weak-L		Weak+L		-	-	-
					CO4	Understand the properties of different microwave components	Strong-H	Weak+L	Weak-L	-				Weak-L		Weak-L	-	-	-	-
					CO1	Describe the advanced processor architecture.	Moderate-M	Moderate-M	Moderate-M		Strong-H	-					-	Weak-L	Moderate-M	Weak-L
72	M	701220615	77567	Embedded Sectors Design Lab	CO2	Interface the input and output peripherals with ARM7-based LPC2129 microcontroller.	Moderate-M	Weak+L	Weak-L		Moderate-M	-					-	Weak-L	Moderate-M	Weak-L
13	*1	701230013	17307	Enlocuded System Design Lab	CO3	Demonstrate the use of different Linux commands and operations/ use of Raspberry Pi and Raspbian	Moderate-M	Weak-L	Weak-L		Strong-H						-	Weak+L	Moderate-M	Weak-L
					CO4	Install and configure the RTOS on the ARM7-based LPC2129 microcontroller.	Moderate-M	Moderate-M	Weak-L		Strong-H							Weak+L	Moderate-M	Weak-L
					CO1	To study and apply basic image processing operations	Moderate-M	Moderate-M			Moderate-M	-					-	-	-	-
					CO2	To implement image processing techniques in spatial domain using point-based and neighbourhood	Moderate-M	Moderate-M	- 1		Moderate-M								-	-
					CO3	To implement image processing algorithms in spectral domain for image enhancement	Moderate-M	Weak-L			Moderate-M									
74	VI	701230616	T7094	Digital Image Processing Lab	C04	To implement monhological operations for image enhancement	Moderate-M	Moderate-M			Moderate-M								-	-
					005	To implement adaption detention to be an accompany to a superstation	Madamta M	Moderate M	-	-	Medante M	-					-	-	-	
				-	006	To implement edge detection techniques foi segmentation	Moderate-M	Moderate-M	Madamia M		Moderate-M								-	
					001	To implement noise intering and induitiesolution techniques on an image	Moderate-M	Moderate=M	Moderate-M		Moderate-M									
					01	To understand EDA now for Digital Design	Moderate-M	Moderate-M	Moderate-M		Strong-H	•						weak+L	Moderate-M	Weak-L
75	VI	701230617	TE7132	CAD for VLSI Design Lab	C02	Design and implementation of digital logic circuits	Moderate-M	Weak+L	Weak+L	-	Moderate-M							Weak+L	Moderate-M	Weak-L
				-	03	Design Combinational circuits using transmission gates	Moderate-M	Weak-L	Weak-L		Strong-H	-					-	Weak+L	Moderate-M	Weak-L
					CO4	Layout and parasitic extraction of combinational and sequential circuits.	Moderate-M	Moderate-M	Weak-L	-	Strong-H	-					-	Weak-L	Moderate-M	Weak-L
			TE7263	Introduction to AI and Machine Learning	CO1	Explain definition, goals and applications of Artificial Intelligence (AI) with examples	Moderate-M	Weak-L	-	-		-		-	-		-	Weak+L	Weak-L	-
					CO2	Description of artificial neural networks and their usage.	Strong-H	Weak-L	-			-					-	Weak-L	Weak-L	
76	VI	701230626			CO3	Analyze the difference between different types of supervised Machine learning algorithms.	Moderate-M	Weak-L	-								-	Weak+L	Weak-L	-
					CO4	To analyze the unsupervised machine learning algorithms like clustering and association rule mining.	Moderate-M	Weak+L		-		-						Weak+L	Weak+L	-
					CO5	To discuss the recommendation system and collaborative filtering using related case studies.	Moderate-M	Weak+L										Weak+L	Weak+L	-
					CO1	Demonstrate implementation of statistical programming concepts in R	Moderate-M	Moderate-M		-	Weak-L	-					-		-	-
					CO2	Demonstrate the application of R package for advanced statistical analysis	Moderate-M	Moderate-M	Moderate-M		Weak-L								-	-
					CO3	Implementation of data preprocessing and EDA for ML techniques	Moderate-M	Moderate-M	Moderate-M		Weak-L								-	
77	VI	701230625	TE7265	Introduction to Data Science	CO4	Demonstrate applications of ML techniques for predictive applications	Moderate-M	Moderate-M	Moderate-M		Weak-L									
					005	Implementation of vigualization and data proprocessing in MI techniques	Moderate-M	Moderate-M	Moderate-M		Weak-I								-	-
					C06	Understanding athical and privacy issues in data estence conduct	Moderate-M	-						Weak-I					-	-
		1	1	1	001	Understand the Basics of OOPs and their operations	West-J		1	1									West-1	1
	1	1	1	1	001	Identify the functionalities of Components in Java	Wart I	Week I	-	1	-						-	1	Wash 1	t
78	VI	701230624	T7499	Inva	002	Analy the Excention Handling in Java	Moderate M	Weak-I	-	1	-			1					Weak-I	+
10		/01230024	. /477	Java	004	Demonstrate concluing of 11 communication in Jaco	Madamte M	Madamte M	Week 1	+	· ·		· ·	+ ·					Work I	+
1	1	1	1	1	004	is a second	mouerate-M	mouerate-M	weak+L	1				· ·				- · · ·	weak-L	<u>+ · · · · · · · · · · · · · · · · · · ·</u>
L		+		+	005	Analyse the fire cycle and components of Applet in Java.	Moderate-M	Moderate-M	Weak-L		-			· ·			-		Weak+L	<u> </u>
1	1	1	1	1	01	Understand the basic WSN technology and supporting protocols	Moderate-M	Moderate-M	Weak-L	1 -									-	
70	VII	70123737	TE7431	Wireless Sensor Network	CO2	Describe the working of various sensors	Moderate-M	Moderate-M	Weak-L			-					-		-	-
		10140101			CO3	Differentiate various routing protocols used in WSN	Moderate-M	Moderate-M	Weak-L	-	-						-		-	-
					CO4	Explain the power management for sensor network	Moderate-M	Moderate-M	Weak+L	-	-						-	-	-	-
					CO1	Simulate the channel propagation models	Strong-H	Moderate-M	Weak-L	-	Moderate-M	-					-	Moderate-M	-	-
	1.00	701220710	TE 23.40	Window Com.	CO2	Demonestrate the CDMA communication systems	Strong-H	Moderate-M	Weak-L	-	-				-	-		Moderate-M	-	-
80	VII	701230719	TE/348	wireless Communication Lab	CO3	Interpret commands to make calls and send messages in GSM Communication Systems	Strong-H	Moderate-M	Weak-L	-	Weak-L						-	Moderate-M	-	-
1	1	1	1	1	CO4	Test the functioanality of the mobile communication systems	Moderate-M	Weak+L	Weak-L									Moderate-M	-	
		1	1	1	COL	Explain the basics of wireless communication and channel propagation	Strone-H	Moderate,M	Weak-I						Weak-I	Wesk-L	Weak-L	Moderate-M	Weak-I	Moderate-M
1	1	1	1	1	007	Design the Multiple Input and Multiple output antenna system	Strong-H	Moderate_M	Weak-L	1					Weak-I	Wesk-L	Weak-L	Moderate-M	Weak-L	Moderate-M
81	VII	701230715	TE7347	Windows Communicatio-	003	Apply the cellular concepts and multiple access techniquer	Strong II	Moderate.M	West-1	1 -					Weak-1	West-J	Wesk-I	Moderate M	West-1	Moderate 34
		101200110	12.54		04	Describe the cellular architecture of GSM and CDMA	Moderate M	Moderate M	WL I	1				1	Wash 1	Wash I	West I	Moderate 24	Wash 1	Moderate M
1	1	1	1	1	04	Distance on cellular architecture of OSM and CDMA.	Moderate-M	Moderate-M	weak-L	1				+ ·	weak-L	weak-t.	wcäk-L.	Madamte M	weak-L	Moderate-M
				+	001	inustatate ure concepts of wireless networking protocols.	Moderate-M	moderate-M	weak-L					· ·	weak-L	weak-t.	weak-L	-Moderate-M	weak-L	moderate-M
1	1	1	1	1	01	Understand the basic concepts of Io1.	Moderate-M			1 .							-		Weak-L	Weak-L
				Internet of Things &	CO2	Study the architecture model of IoT.	Moderate-M	Moderate-M	-	-	-						-	-	-	
82	VII	701230705	TE7045	Applications	CO3	Describe the different communication protocols used in IoT.	Moderate-M	Moderate-M		-				· ·			-		-	
	1	1	1		CO4	Analyze the different standards used in IoT Systems.	Moderate-M	Moderate-M				Moderate-M						-		-
		1			CO5	Analyze applications of IoT in real-time scenarios	Moderate-M	Moderate-M	-	-	-	-	-	-	Strong-H	Moderate-M			Strong-H	Moderate-M
					CO1	Write python programs.	Moderate-M	Moderate-M	-	-	Moderate-M	-	-	-	-	-	-	-	-	-
	1.00	701220700	TE2040	Internet of Things &	CO2	Make use of Raspberry pi and explain its working	Moderate-M	Weak+L	-	-	Moderate-M	-				-	-	-	-	-
8.5	VII	/01230/09	11:/048	Applications Lab	CO3	Interface different peripherals with Raspberry Pi.	Moderate-M	Moderate-M	Weak-L	-	Moderate-M						-	-	-	-
	1	1	1	1	CO4	Monitor and control the sensors and actuators through web server.	Moderate-M	Moderate-M	Weak-L	-	Moderate-M						-		-	-
		1	1	1	CO1	Analyze and illustrate threat models	Moderate-M	Moderate-M	Weak-L									Moderate-M	-	-
1.00		1	1	1																

Sr. No.	Semester	Institute Course Code	Catalog Course Code	Title	Course Outcome No	Course Outcome Statement	PO01	PO02	PO03	PO04	PO05	PO06	PO07	PO08	PO09	PO10	POII	PO12	PO13	PO14
1	l				CO2	Examine the different cyber laws and their importance		-	-	-	-			Moderate-M			Weak-L	Strong-H	-	-
84	VII	701230702	17674	Cyber Security	CO3	Compare and contrast the implemented management practices in the cyber		-	-	-	-	Moderate-M		Moderate-M			Weak-L	Strong-H	-	-
					CO4	Illustrate Symmetric and Asymmetric Encryption mechanisms	Moderate-M	Strong-H	Moderate-M	Moderate-M	-							Strong-H	-	-
					CO1	Explain the basic structure and operation of digital computer	Moderate-M	Moderate-M	-	-								Weak-L		-
	1.77	201220224	777430	6 I	CO2	Describe arithmetic and logic unit and implementation of fixed point and floating-point arithmetic	Moderate-M	Moderate-M	-	-								Weak-L	-	-
82	VII	/01230/36	1E/430	Computer Architecture	CO3	Explore the concept of pipelining	Moderate-M	Moderate-M	-	-	-							Weak-L	-	-
					CO4	Describe with hierarchical memory system, I/O devices and standard I/O interfaces	Moderate-M	Moderate-M										Weak-L		
					CO1	Explain the importance of quality in manufacturing and service sector and its statistical foundation	Moderate-M	-	-		Moderate-M								-	-
					CO2	Describe the fundamental concept of Six Sigma	Moderate-M	Moderate-M	-		Moderate-M	-			-			-	-	-
86	VII	701230729	T7650	Six Sigma	CO3	Explain the DMAIC and DMADV methodologies of Six Sigma.	Moderate-M	Moderate-M	-	-	Moderate-M							-	-	-
					CO4	Elaborate use of different tools in Six Sigma		-	-		Moderate-M								-	-
					CO5	Explain the sustenance of Six Sigma	-	-	-		Moderate-M	-			-		-	-	-	-
					CO1	Describe how behavior affects the organizational performance and effectiveness.		-	-			Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M	Moderate-M	-	-
					CO2	Identify the factors affecting individual behavior at work place.		-	-		-	Moderate-M	Strong-H	Strong-H	Moderate-M	Moderate-M	Moderate-M	Moderate-M	-	
	VII	701220720	77595	Omminutional Robertions	CO3	Demonstrate the importance of team dynamics in organizations.		-	-	-	-	Strong-H	Strong-H	Strong-H	Strong-H	Moderate-M	Moderate-M	Moderate-M		-
87	vii	701230739	12585	Organizational Benaviour	CO4	Appreciate the differences in organizational cultural values.		-	-			Moderate-M	Strong-H	Strong-H	Moderate-M	Strong-H	Moderate-M	Moderate-M	-	-
					CO5	Distinguish between the characteristics of managers and leaders.	-	-	-		-	Moderate-M	Strong-H	Strong-H	Moderate-M	Strong-H	Moderate-M	Moderate-M		
					CO6	Understand and apply the knowledge of individual differences at workplace.		-				Moderate-M	Strong-H	Strong-H	Moderate-M	Strong-H	Moderate-M	Moderate-M		
					CO1	Explorer the application of the electronic systems in biological and medical applications.	Moderate-M	Moderate-M	-											
					CO2	Understand the practical limitations on the electronic components while handling bio-substances.	Moderate-M	Moderate-M	-		-							-		
88	VII	701230712	TE7306	Biomedical Electronics	CO3	Analyse the biological processes like other electronic processes.	Moderate-M	Moderate-M	-											
00	***	/01230/12	11.1500	Distillential Electronics	CO4	Acquire understanding regarding bioinstruments and devices, along with their practical applications.	Weak-L	Moderate-M	-	-								-	-	-
					CO5	Acquire knowledge about medical treatments involving the use of electronic instruments.	Strong-H	Moderate-M	-	-	-	-	-					-	-	-
					CO6	Study of diagnostic medical instruments	Weak-L	Moderate-M	-	-	-	-	-	-	-	-	-	-	-	-
					CO1	Understand the basics of the biomedical signals.	Moderate-M	Moderate-M	-	-									-	-
89	VII	701230716	TE7307	Biomedical Electronics Lab	CO2	Understand the concept about ECG, EMG and EEG.	Moderate-M	Moderate-M	-	-	-	-					-	-	-	-
					CO3	Simulate the biomedical signals using software tool and analyse the same.	Moderate-M	Moderate-M	-	Weak-L	Weak-L	-	-	-	-	-	-	-	-	-
					CO4	Simulate the biomedical instruments such as haemodialysis machine, defibrillator and pace maker.	Weak-L	Moderate-M	-	-	-							-	-	-
					CO1	Explain the concept of validation and testing in machine learning	Strong-H	Moderate-M	Moderate-M	-	Moderate-M				Moderate-M		-	Moderate-M	Moderate-M	Moderate-M
					CO2	Differentiate between various regression techniques	Strong-H	Moderate-M	Moderate-M	Moderate-M	Moderate-M				Moderate-M			Weak+L	Weak+L	Moderate-M
90	VII	701230704	T7473	Artificial Intelligence	CO3	Analyze various classification algorithms	Strong-H	Strong-H	Moderate-M	Moderate-M	Moderate-M				Moderate-M			Moderate-M	Moderate-M	Moderate-M
					C04	Distinguish between various clustering algorithms	Strong-H	Moderate-M	Moderate-M	Moderate-M	Moderate-M				Moderate-M			Moderate-M	Moderate-M	Moderate-M
					005	Design and apply ANN algorithms to a given dataset	Strong-H	Moderate-M	Moderate-M	Moderate-M	Moderate-M				Moderate-M			Moderate-M	Moderate-M	Moderate-M
					001	Perform Exploratory data analysis using EDA tools	Strong-H	Moderate-M	Moderate-M	Weak-L	Strong-H							Moderate-M	-	-
91	VII	701230708	TE7014	Artificial Intelligence Lab	002	implement regression technique on a given dataset	Strong-H	Moderate-M	Moderate-M	Moderate-M	Strong-H							weak+L	-	
					03	implement various classification and clustering methods	Strong-H	Strong-H	Moderate-M	Moderate-M	Strong-H							Moderate-M		
					004	implement multilayer neural network for a given application	Strong-H	Moderate-M	Moderate-M	Moderate-M	Strong-H	-						Moderate-M		
					001	Demonstrate competence in identifying relevant information on the given topics.	Strong-H	Strong-H	Moderate-M	Moderate-M	Strong-H	weak-1.	Moderate-M	Moderate-M					Moderate-M	Moderate-M
		201220002	77002		002	Prepare presentation and use IC 1 tools.		-	-		Strong-H				-			-	-	
92	viii	/01230802	17802	Seminar	004	Communicate concisery, clearly and effectively for the topic.					Madamia M			- Wash I	weak+L	Strong-H		weak+L		
					004	Present miorination in a wen structured format.					moderate-m			weak-t.		Suoig-n				
					001	Farthcipate attentivery in the peer presentations.	- Madamia M	- Madamia M	-	-		- Madamia M			weak+L	wcak+L		weak+L.	<u> </u>	+ -
					002	Explore career interests and anematives before graduation	Strong-H	Moderate-M	-	-	Wenk-I	mouerate-M						Strong-H	<u> </u>	<u> </u>
					003	Array interacts, which interact	Strong-1	Moderate M	Strong-P	Strong, I ¹	Moderate,M						-	Sublig-ri	Moderate M	Strong, P
93	VIII	701230801	T7912	Internship	004	Develop a work othic and strinular masked for excession ful canar	5aolig-11		Surolig-ri	Sudig-ri	Moderate-M			Strong-U		Wesk-J		Moderate M	moucrate-m	Subag-ri
73					005	Build strong communication and internersonal skill					modelate-M			Sublig-H		Strong_H	Strong_H			1
1	1		1		006	Gain uraful work experience	Weak-I	Wenk-I	-	-	Moderate-M	-	Strong-II			Strong-H	Moderate-M		- Moderate-M	Moderate-M
	1	1				Can acta work experience	meak-L	weak-t.			mouchaie-m		Journa and Sarolig-H			ouolig-ri	mouchate-ivi		moucrate-m	moucrate-m