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Mapping of COs with POs and PSOs (Department of Electrical Engineering)

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Mathematics -III (BTBSC301)	1	Understand the concept of Laplace transform and inverse Laplace transform of elementary functions and apply it to solve the linear differential equations with constant coefficients having their applications in mechanical, electrical, chemical, communication etc. systems.	3	3		1									2		
	2	Apply the concept of Fourier transform to solve the boundary value problems, problems in signal processing and communication system.	3	3		1									2		
	3	Apply partial differential equations to solve heat equation, wave equation and Laplace equation etc.	3	3											1		
	4	Analyze conformal mapping, transformation and perform contour integration of complex function in the study of electromagnetics and signal processing.	3	2											1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Network Analysis and Synthesis BTEEC302	1	Review Basic Components Of Electric Network And Understand Network Theorems To Simplify Complex Networks.	2	2	2	2									2		1
	2	Apply Graph Theory For Electric Network Analyses	1	1											2		1
	3	Understand Transient Analysis In Electrical Circuits	2	2	2	2									2		1
	4	Apply Laplace Transform For Electric Network Analyses	3	3		2									2		1
	5	Evaluate The Parameters Of Two Port Networks	2	2		2									2		
	6	Analyze A. C. Circuit And Design Various Types Of Filters.	2	2		2									2		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Measurement and Instrumentation BTEEC304	1	To Understand Philosophy Of Measurement.	3											1	1		
	2	To Understand Different Methods Analog And Digital Measurement.	2	2			1							1	2		
	3	To Study Principle Of Construction And Operation Of Different Transducer And Display Methods.	2	2			1							1	2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Engineering Materials BTEEE305A	1	Classify Various Properties Of Electrical Engineering Materials,	2	3		3										1	
	2	Categories Dielectric Materials And Relate The Dielectric Polarization With Frequency And Temperature	3	2		3										1	
	3	Illustrate Semiconductor Properties With Respect To Pn Junction Diode	3	3		3									2		
	4	Discover And Illustrate The Applications Of Magnetic Materials In Electrical Engineering	3	2		2									3		
	5	Discover And Illustrate The Applications Of X-Ray Diffraction, Ultrasonics And Other Non-Destructive Testing Methods	3	2		1									3		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Applied Physics BTEEE305B	1	Understand Concept Of Electromagnetic Theory And Magnetism	3	2			1								2		
	2	Understand Concept Of Dielectric And Super Conductivity	1		2	3									1		
	3	Understand Concept Of Nanomaterial	1	3		2										2	
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Signals and Systems BTEEE305C	1	TO STUDY CLASSIFICATION OF SIGNALS AND SYSTEM	2	2	1	1									1		
	2	TO ANALYZE DIFF. TYPES OF TIME SIGNAL	3	3	1	1									1		1

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Economics BTHM306	1	To study concept of time value of money								3	2	2		3		2	
	2	To study about demand in detail,								2	2	2	2	3		1	
	3	To understand Meaning of Production and factors of production					3		2			2	3	3		2	
	4	To understand dif. Concept about market										2	3	3			3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical workshop /Mini Project	1	Build And Verifies Basic Scientific Principles.	3	2	2	1	2			1	2	2	1	2	2		1
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Training/Internship/Industrial Training Evaluation (BTEEF310)	1	Explore Career Alternatives Prior To Graduation	2		2			2			3		1	3		2	1
	2	Integrate Theory And Practical Approach	2		2			2			3		1	3		2	1
	3	To Develop The Ability As A Problem Solver Using Practical Approach	2		2			2			3		1	3		2	1
	4	Develop Communication, Interpersonal And Other Critical Skills Required For Interview Process	2		2			2			3		1	3		2	1
	5	Acquire Employment Skills Leading To Industry-Ready Engineers	2		2			2			3		1	3		1	1

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Machine-I BTEEC401	1	Understand different types, construction and principle of single phase transformer and its application	2		2									1	2		
	2	Classify different types of connections of 3 phase transformer, and understand the parallel operations, Phase Conversion concept. Design of equivalent circuit and various test of Transformer.		2										1	1		
	3	Apply Electromechanical energy conversion principle and calculate the magnetic force and torque of various system	2												1		
	4	Understand operating principle, Constructional features types, performance characteristics, armature reaction, commutation of dc generator and their applications	2	2	3	2								1	2		2
	5	Develop Torque equation and calculate Current, Power, Losses and efficiency of various types of DC motors and understand different characteristics, various methods of speed control	2	2	2	2								1	2		2
	6	differentiate the construction of various types of special machines like Reluctance machine, VRM, stepper motor, BLDC and analyse its application in the field.	2	2	2												

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System-I BTEEC402-O	1	Understand basic operation of power system, power system components and their characteristics.	1	2	3						1	1			2		
	2	Understand different types of power plants, construction, working and components. Factors describing economics of the power plants.	1	2	3						1	1			2		
	3	Major electric components, alternator, transformer, control and metering of the power system	2	2	3						2	2			2		
	4	Parameters calculation of transmission network like inductance, capacitance, conductance and resistance.	2	2	3						2	2			2		
	5	Develop the ability to implement the appropriate safety equipment for design of electrical power system with enhancing the efficiency of the transmission and distribution system.	2	1	3						2	2			2	2	
	6	Judge the suitability of installing overhead and underground power transmission strategies considering electrical, mechanical, performance, safety and economic constraints.	2	1	2						2	2			3	2	
	7	Choose the appropriate type of power generating station following norms and guidelines related to cost, environment, societal and ethical issues. Also review the different tariff systems available and determine the one most appropriate for a given scenario to optimize the revenue earned.	2	1	3						2	2			1		
	8	Recognize the need to continuously follow the advancements in technology and incorporating them in the present system to improve efficiency	2	1	1		2				3	3			1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Installation and Estimation BTEEC403 -O	1	To Prepare Estimates And Costing Of Electrical Installation Of Power System				3	2				2				3		1
	2	To Understand Procedures Of Contracting And Purchase	2								2			3		2	3

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Numerical Method and Programming BTEEC404	1	To Study And Understand Matlab Programming.	1				3								3		1
	2	To Review Mathematical Concepts .	2	3	1										2		
	3	To Develop Computer Program For Linear And Nonlinear Equations.	1		2	3									2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Product Design Engineering (BTID405)	1	Create Simple Mechanical Or Other Designs	1	1	2		2								2	2	
	2	Create Design Documents For Knowledge Sharing	1	1	1		2				2	2			2	1	
	3	Manage Own Work To Meet Design Requirements							1		2		3		1	1	
	4	Work Effectively In A Team	1				1			1	3		2		1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Solid State Devices BTEEE406A	1	To Study Construction And Characteristics Of Solid State Devices.	2			2	2							1			
	2	To Apply Operational Amplifier Models In Circuits Employing Negative Feedback		3	1	1			1			1					
	3	To Design Electronics Circuit Using Timer Ic And Voltage Regulators.		2	3	2	2		1								
	4	To Perform Analysis Of Amplifiers Using Small Signal Models For The Circuit Elements.			2		1	2				2					
	5	To Calculate The Frequency Response Of Circuits Containing Bjt, Op-Amp Etc		2	2	2	2						2				
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Analog and Digital Electronics BTEEE-406B	1	To Review Basic Number System	3	2	1										1		
	2	To Understand Deign And Characteristics Of Digital Logic Gates.	3	2	1										1		
	3	To Study Different Techniques In Use Of Digital Circuits.	3	2	1										1		
	4	To Design Digital Systems	3	2	1										1		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electromagnetic Theory BTEEE-406C	1	To Understand Vector Relations In Diff. Forms	2												1		
	2	To Analyze Diff. Laws And Their Solution	2		2										1		
	3	To Study About Magneto Static	2	1											1		
	4	To Understand Time Varying Field And Effect Of Magnetism In Transmission Line	2	1											1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Industrial safety BTEEE-407A	1	To understand importance of safety in industrial environment.	1	2										2	1		
	2	To understand different safety procedures in an industrial environment.	1	2										2	1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Introduction to non Conventional Energy Sources BTEEOE407-B	1	Review Energy Scenario.	2					1	3					2		3	2
	2	Understand Basic Concepts, Construction And Operational Features Of Different Non-Conventional Energy Sources.	2	1				1	3					2		3	2
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Training/Internship /Industrial Training	1	Explore Career Alternatives Prior To Graduation	2		2			2			3		1	3		2	1
	2	Integrate Theory And Practical Approach	2		2			2			3		1	3		2	1
	3	To Develop The Ability As A Problem Solver Using Practical Approach	2		2			2			3		1	3		2	1
	4	Develop Communication, Interpersonal And Other Critical Skills Required For Interview Process	2		2			2			3		1	3		2	1
	5	Acquire Employment Skills Leading To Industry-Ready Engineers	2		2			2			3		1	3		1	1

Course/Subject with course code	Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Mathematics - III (BTBSC301)	1	Understand the concept of Laplace transform and inverse Laplace transform of elementary functions and apply it to solve the linear differential equations with constant coefficients having their applications in mechanical, electrical, chemical, communication etc. systems.	3	3		1									2		
	2	Apply the concept of Fourier transform to solve the boundary value problems, problems in signal processing and communication system.	3	3		1									2		
	3	Apply partial differential equations to solve heat equation, wave equation and Laplace equation etc.	3	3											1		
	4	Analyze conformal mapping, transformation and perform contour integration of complex function in the study of electromagnetics and signal processing.	3	2											1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Network Analysis and Synthesis BTEEC302	1	Review basic components of electric network and understand network theorems to simplify complex networks.	2	2	2	2									2		1
	2	Apply graph theory for electric network analyses	1	1											2		1
	3	Understand transient analysis in electrical circuits	2	2	2	2									2		1
	4	Apply laplace transform for electric network analyses	3	3		2									2		1
	5	Evaluate the parameters of two port networks	2	2		2									2		
	6	Analyze a. C. Circuit and design various types of filters.	2	2		2									2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Measurement and Instrumentation BTEEC304	1	To understand philosophy of measurement.	3											1	1		
	2	To understand different methods analog and digital measurement.	2	2			1							1	2		
	3	To study principle of construction and operation of different transducer and display methods.	2	2			1							1	2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Engineering Materials BTEEE305A	1	Classify various properties of electrical engineering materials,	**2**	**3**		**3**										1	
	2	Categories dielectric materials and relate the dielectric polarization with frequency and temperature	**3**	**2**		**3**										1	
	3	Illustrate semiconductor properties with respect to PN junction diode	**3**	**3**		**3**									2		
	4	Discover and illustrate the applications of magnetic materials in Electrical Engineering	**3**	**2**		**2**									3		
	5	Discover and illustrate the applications of X-ray diffraction, ultrasonics and other non-destructive testing methods	**3**	**2**		**1**									3		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Applied Physics BTEEE305B		1.Understand concept of Electromagnetic theory and Magnetism	**3**	**2**			**1**								2		
		2. Understand concept of Dielectric and Super conductivity	**1**		**2**	**3**									1		
		3. Understand concept of nanomaterial	**1**	**3**		**2**										2	
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Signals and Systems BTEEE305C	1	To study classification of signals and system	**2**	**2**	**1**	**1**									1		
	2	To analyze diff. Types of time signal	**3**	**3**	**1**	**1**									1		1
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Economics BTHM306	1	To study concept of time value of money								**3**	**2**	**2**		**3**		2	
	2	To study about demand in detail,								**2**	**2**	**2**	**2**	**3**		1	
	3	To understand Meaning of Production and factors of production					**3**		**2**			**2**	**3**	**3**		2	
	4	To understand dif. Concept about market										**2**	**3**	**3**			3

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical workshop /Mini Project	1	Build and verifies basic scientific principles.	3	2	2	1	2			1	2	2	1	2	2		1
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Training/Internship/Industrial Training Evaluation (BTEEF310)	1	Explore career alternatives prior to graduation	2		2			2			3		1	3		2	1
	2	Integrate theory and practical approach	2		2			2			3		1	3		2	1
	3	To develop the ability as a problem solver using practical approach	2		2			2			3		1	3		2	1
	4	Develop communication, interpersonal and other critical skills required for interview process	2		2			2			3		1	3		2	1
	5	Acquire employment skills leading to industry-ready engineers	2		2			2			3		1	3		1	1

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Machine-I BTEEC401	1	Understand different types, construction and principle of single phase transformer and its application	**2**		**2**									**1**	2		
	2	Classify different types of connections of 3 phase transformer, and understand the parallel operations, Phase Conversion concept. Design of equivalent circuit and various test of Transformer.		**2**										**1**	1		
	3	Apply Electromechanical energy conversion principle and calculate the magnetic force and torque of various system	**2**												1		
	4	Understand operating principle, Constructional features types, performance characteristics, armature reaction, commutation of dc generator and their applications	**2**	**2**	**3**	**2**								**1**	2		2
	5	Develop Torque equation and calculate Current, Power, Losses and efficiency of various types of DC motors and understand different characteristics, various methods of speed control	**2**	**2**	**2**	**2**								**1**	2		2
	6	differentiate the construction of various types of special machines like Reluctance machine, VRM, stepper motor, BLDC and analyse its application in the field.	**2**	**2**	**2**												

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System-I BTEEC402-O	1	Understand basic operation of power system, power system components and their characteristics.	1	2	3						1	1			2		
	2	Understand different types of power plants, construction, working and components. Factors describing economics of the power plants.	1	2	3						1	1			2		
	3	Major electric components, alternator, transformer, control and metering of the power system	2	2	3						2	2			2		
	4	Parameters calculation of transmission network like inductance, capacitance, conductance and resistance.	2	2	3						2	2			2		
	5	Develop the ability to implement the appropriate safety equipment for design of electrical power system with enhancing the efficiency of the transmission and distribution system.	2	1	3						2	2			2	2	
	6	Judge the suitability of installing overhead and underground power transmission strategies considering electrical, mechanical, performance, safety and economic constraints.	2	1	2						2	2			3	2	
	7	Choose the appropriate type of power generating station following norms and guidelines related to cost, environment, societal and ethical issues. Also review the different tariff systems available and determine the one most appropriate for a given scenario to optimize the revenue earned.	2	1	3						2	2			1		
	8	Recognize the need to continuously follow the advancements in technology and incorporating them in the present system to improve efficiency	2	1	1		2				3	3			1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Installation and Estimation BTEEC403 -O	1	To prepare estimates and costing of electrical installation of power system				3	2				2				3		1
	2	To understand procedures of contracting and purchase	2								2			3		2	3

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Numerical Method and Programming BTEEC404	1	To study and understand matlab programming.	1				3								3		1
	2	To review mathematical concepts .	2	3	1										2		
	3	To develop computer program for linear and nonlinear equations.	1		2	3									2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Product Design Engineering (BTID405)	1	Create simple mechanical or other designs	1	1	2		2								2	2	
	2	Create design documents for knowledge sharing	1	1	1		2				2	2			2	1	
	3	Manage own work to meet design requirements							1		2		3		1	1	
	4	Work effectively in a team	1				1			1	3		2		1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Solid State Devices BTEEE406A	1	To study construction and characteristics of solid state devices.	2			2	2							1			
	2	To apply operational amplifier models in circuits employing negative feedback		3	1	1			1			1					
	3	To design electronics circuit using Timer IC and voltage regulators.		2	3	2	2		1								
	4	To perform analysis of amplifiers using small signal models for the circuit elements.			2		1	2				2					
	5	To calculate the frequency response of circuits containing BJT, Op-Amp etc		2	2	2	2						2				
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Analog and Digital Electronics BTEEE-406B	1	To review basic number system	3	2	1										1		
	2	To understand deign and characteristics of digital logic gates.	3	2	1										1		
	3	To study different techniques in use of digital circuits.	3	2	1										1		
	4	To design digital systems	3	2	1										1		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electromagnetic Theory BTEEE-406C	1	To understand vector relations in diff. forms	2												1		
	2	To analyze diff. laws and their solution	2		2										1		
	3	To study about magneto static	2	1											1		
	4	To understand time varying field and effect of magnetism in transmission line	2	1											1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Industrial safety BTEEE-407A	1	To understand importance of safety in industrial environment.	1	2										2	1		
	2	To understand different safety procedures in an industrial environment.	1	2										2	1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Introduction to non Conventional Energy Sources BTEEOE407-B	1	REVIEW ENERGY SCENARIO.	2					1	3					2		3	2
	2	**Understand basic concepts, construction and operational features of different non-conventional energy sources.**	2	1				1	3					2		3	2
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Training/Internship /Industrial Training	1	Explore career alternatives prior to graduation	2		2			2			3		1	3		2	1
	2	Integrate theory and practical approach	2		2			2			3		1	3		2	1
	3	To develop the ability as a problem solver using practical approach	2		2			2			3		1	3		2	1
	4	Develop communication, interpersonal and other critical skills required for interview process	2		2			2			3		1	3		2	1
	5	Acquire employment skills leading to industry-ready engineers	2		2			2			3		1	3		1	1

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Machine -II BTEEC501	1	Understand principle of operation of ac machines	3	3	2	3											
	2	Analyze the concept of steady state analysis in ac machines	3	3	3	3											
	3	Study different methods of speed control of ac and dc motor	3	3	3	3	2							2			
	4	Study importance and procedure of different performance test on ac and dc motor	3	3	3	2	2							2			
	5	Determine different operating characteristics of ac and dc machines	3	3	3	2	2										
	6	Understand operation & application of special machines	1	2	1	2											
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System -II BTEEC502-O	1	Understand different parameters of power system operation and control	3	3	2	3	1	2			2			3	1		
	2	Understand load flow and different methods of reactive power control	3	3	2	3	3	2			3			2	2		
	3	To understand sequence network of power system elements	3	3	2	3	3	2			2			1	2		
	4	To understand different methods of fault analysis and stability study	3	3	2	3	3	2			2			3	2	2	
	5	Study transient stability analysis & equal area criteria	3	3	2	3	3	2			3			3	2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEL503 Microprocessor and micro Controller	1	To know the architecture of 8085 and 8051	2	1											2		
	2	To understand interfacing and interrupt features of 8085 and 8051.	2	1	1	1									1		
	3	To develop program for basic applications	2	2	3	2	1								2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTHM504 Value Education, Human Rights and Legislative Procedures [MOOC/Swayam/NPTEL]	1	To understand value of education and self-development									1			1			1
	2	To develop good values and character To know Human right and legislative procedure								2	2						2
	3	To know Human right and legislative procedure									1			1			

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Illumination Engineering BTEEE505	1	To get the detailed information about modern lamps and their accessories.	2	1	-										2		
	2	To get detailed insight of indoor and outdoor illumination system components, its controls and design aspects. To introduce the modern trends in the lighting	2	2	2	1									2	1	
	3	To know the requirements of energy efficient lighting.	2	2	2				2						2	1	
	4	To introduce the modern trends in the lighting	1	-					2						2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Advances in Renewable Energy Sources.BTEEE505	1	To know the Principle of Energy Conversion Techniques from biomass,geothermal and hybrid energy systems	2					2	3					2		3	
	2	**To understand effect of air pollution and ecosystems**	2					2	3					2		3	
	3																
	4																
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1.Electrical Mobility.BTEEOE506	1	Understand the need for electrical mobility, environmental benefits and classification of electrical vehicles	-	2	-	-	-	3	3	-	-	-	-	-	-	-	-
	2	Know different energy storage technologies used for electrical mobility	-	3	-	-	-	2	2	-	-	-	-	-	-	-	-
	3	Identify different electrical machines and associated power converters for a particular application	-	3	-	2	1	-	-	-	-	-	-	-	-	-	-
	4	Prepare a simulation model of basic electrical vehicle and analyze its performance	-	-	3	-	-	-	-	-	-	-	2	-	-	-	-

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power Plant Engineering.BTEEOE506	1	To Review basic components of Power system, energy sources			2									3			
	2	To understand principle of construction and operation of different conventional power plants		2													
	3	Analyse the working of Conventional Power Plant	2	3		3											
	4	Design the layout of Thermal and Hydro Power plant with ancillary services	3	2	3	2								2			
	5	Analyze the limitations and advantages of Nuclear Power Plant		2	2	3											
	6	Understand the significance and working of Renewable Energy Sources						1	2	1							
	7	Understand the working of Co-generation/Combined power Plant	3	3		3			2								
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Design and Analysis of Algorithm BTEEOE506	1	To know fundamental characteristic of an algorithm.	2	2											1		
	2	To understand strategy of algorithm formation,	2	1	1										2		
	3	To develop different algorithm.	2	2	2	1	1								2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC601 Control System	1	To know different basic concepts and components of a control system	3											3	3		
	2	To derive transfer functions of basic control system components	3	3		2								3	3		
	3	To perform stability analysis using time domain and frequency domain response on a given system	3	3		2								3	3		
	4	To design and analyze pid controller.	3		3									3	3		
	5	To understand and analyze state variable technique.	3	3										3	3		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC602 -OPrinciples of Electrical Machine Design	1	To understand principles of electric machine design.	2			1								3	2		
	2	To design different components of electric machine.	2	2	2	1								3	2		1
	3	To design Transformer	3	2	2	2								2	1		
	4	To understand CAD and use it for transformer design	2	1		2								2			1
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC603 -OPower Electronics	1	To review principle of construction, operation and characteristics of basic semiconductor devices	2	2											2		
	2	To understand and analyze the performance of controlled and uncontrolled converters.	2	2											2		
	3	To understand and analyze the performance of dc to dc converters. Dc to ac converters	3	3											2		
	4	To understand and analyze performance of ac voltage controllers.	3	3											2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Industrial automation and ControlBTEEE604	1	To understand construction and working principle of different industrial measurement systems.	2	1	1						1	2			2		
	2	To understand new trends in industrial process control.	2	1	1						1	2					
	3	To Understand Industrial Control Systems	1	1	1						1	2			2		
	4	Understand different layers of the industrial automation	1	1	1						1	2				1	
	5	Understand the fieldbus and communication in industrial automation	2	2	1						1	2			2		
	6	Different drives and online control in industrial automation	2	1	1						1	2					
	7	Different Controllers used in industrial automation	2	1	1						1	2					
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Design of Experiments BTEEE604	1	To understand experimental design principles.	2	2	1										2		
	2	To understand different experimental design used in industry.	2	2	1		2								2		
	3	To deign computer experiments to use with engineering problems.	2	1	2	2	2								2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Artificial neural NetworkBTEEE604	1	To review basic principles of neuron structure.	2	1											1		
	2	To understand building blocks artificial neural network.	2	1											1		
	3	To understand different networks of ANN.	2	1											1		
	4	To develop different algorithm for learning.	2	2	2	2									2		
	5	To study and understand Fuzzy neural networks	2	1											1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
COMPUTER AIDED ANALYSIS AND DESIGN	1	To study different computer aided tools in engineering application	2	1	2	2	3	NA	NA	NA	2	1	1	2	2	1	NA
	2	To understand the functionality of different engineering software	2	1	1	1	3	NA	NA	NA	2	NA	1	1	2	1	NA
	3	To apply different software in engineering design.	2	2	2	1	3	NA	NA	NA	1	NA	NA	NA	1	1	NA
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Switch Gear and Protection BTEEC605	1	To understand principles of protective relaying.	-	-	-	1	-	-	-	-	-	-	-	3	-	-	-
	2	To understand principle of construction, operation and selection of different type of circuit breaker used in power system.	-	-	-	1	-	-	-	-	-	-	-	3	-	-	-
	3	To understand different protection schemes used in power system operation	1	1	-	2	-	-	-	-	-	-	-	3	-	-	-
	4	Apply principles of power system protection using digital and numerical protection techniques	1	1	-	2	-	-	-	-	-	-	-	2	-	-	-
	5	Understand the need for insulation coordination and select appropriate insulation ratings for substation equipment	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Mechatronics BTEEC605	1	To understand concept of mechatronics.	2				2							2	2		
	2	To understand sensor and transducer construction and operation.	3		2									2	3	2	3
	3	To understand microprocessor architecture and operation.	3	3	3									3	2		
	4	To understand principle of construction and operation of PLC				2	3								3	2	
	5	To design a robo for engineering application.	2		3									2			3

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Rural Technology and Community Development BTEEOE606	1	To analysis data, information and knowledge. To understand concepts of marketing. To identify projects and work for community development To understand and analyze business model.							3		2		3		1	2	
	2	To understand concepts of marketing.									3		2	3			
	3	To identify projects and work for community development							3	2		2	3			3	
	4	To understand and analyze business model.										3	2		2		2
	5																
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Project Management BTEEOE606	1	To understand concepts of project management	-	-	-	-	-	-	-	-	-	-	3	2	3	-	-
	2	To develop project plan	-	-	-	-	-	-	-	-	-	3	-	2	-	2	-
	3	To understand the project implementation strategy	-	-	-	-	-	-	-	-	2	-	-	3	-	-	3
	4	To analyze post project affects	-	-	-	-	-	-	-	-	3	-	-	-	-	3	-
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Knowledge ManagementBTEEOE606	1	To understand different components knowledge management.					3							2	2		
	2	To conduct knowledge audit and knowledge management practices in organization.						2		2	3	3	2	3		3	3

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Mathematics - III (BTBSC301)	1	Understand the concept of Laplace transform and inverse Laplace transform of elementary functions and apply it to solve the linear differential equations with constant coefficients having their applications in mechanical, electrical, chemical, communication etc. systems.	3	3		1									2		
	2	Apply the concept of Fourier transform to solve the boundary value problems, problems in signal processing and communication system.	3	3		1									2		
	3	Apply partial differential equations to solve heat equation, wave equation and Laplace equation etc.	3	3											1		
	4	Analyze conformal mapping, transformation and perform contour integration of complex function in the study of electromagnetics and signal processing.	3	2											1		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Network Analysis and Synthesis BTEEC302	1	Review Basic Components Of Electric Network And Understand Network Theorems To Simplify Complex Networks.	2	2	2	2									2		1
	2	Apply Graph Theory For Electric Network Analyses	1	1											2		1
	3	Understand Transient Analysis In Electrical Circuits	2	2	2	2									2		1
	4	Apply Laplace Transform For Electric Network Analyses	3	3		2									2		1
	5	Evaluate The Parameters Of Two Port Networks	2	2		2									2		
	6	Analyze A. C. Circuit And Design Various Types Of Filters.	2	2		2									2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Measurement and Instrumentation BTEEC304	1	To Understand Philosophy Of Measurement.	3											1	1		
	2	To Understand Different Methods Analog And Digital Measurement.	2	2			1							1	2		
	3	To Study Principle Of Construction And Operation Of Different Transducer And Display Methods.	2	2			1							1	2		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Engineering Materials BTEEE305A	1	Classify Various Properties Of Electrical Engineering Materials,	2	3		3										1	
	2	Categories Dielectric Materials And Relate The Dielectric Polarization With Frequency And Temperature	3	2		3										1	
	3	Illustrate Semiconductor Properties With Respect To Pn Junction Diode	3	3		3									2		
	4	Discover And Illustrate The Applications Of Magnetic Materials In Electrical Engineering	3	2		2									3		
	5	Discover And Illustrate The Applications Of X-Ray Diffraction, Ultrasonics And Other Non-Destructive Testing Methods	3	2		1									3		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Applied Physics BTEEE305B	1	1.Understand concept of Electromagnetic theory and Magnetism	3	2			1								2		
	2	2. Understand concept of Dielectric and Super conductivity	1		2	3									1		
	3	3. Understand concept of nanomaterial	1	3		2										2	
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Signals and Systems BTEEE305C	1	To Study Classification Of Signals And System	2	2	1	1									1		
	2	To Analyze Diff. Types Of Time Signal	3	3	1	1									1		1
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Basic Human Rights BTHM3401	1	Understand the history of human rights						2									
	2	Learn to respect others caste, religion, region and culture															
	3	Be aware of their rights as Indian citizen															
	4	Understand the importance of groups and communities in the society															
	5	Realize the philosophical and cultural basis and historical perspectives of human rights									3						
	6	Make them aware of their responsibilities towards the nation								2		2		1			2

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Economics BTHM306	1	To study concept of time value of money								3	2	2		3		2	
	2	To study about demand in detail,								2	2	2	2	3		1	
	3	To understand Meaning of Production and factors of production					3		2			2	3	3		2	
	4	To understand dif. Concept about market										2	3	3			3
	5																
	6																
	7																
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical workshop /Mini Project	1	Build And Verifies Basic Scientific Principles.	3	2	2	1	2			1	2	2	1	2	2		1

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Training/Internship/Industrial Training Evaluation (BTEEF310)	1	Explore Career Alternatives Prior To Graduation	2		2			2			3		1	3		2	1
	2	Integrate Theory And Practical Approach	2		2			2			3		1	3		2	1
	3	To Develop The Ability As A Problem Solver Using Practical Approach	2		2			2			3		1	3		2	1
	4	Develop Communication, Interpersonal And Other Critical Skills Required For Interview Process	2		2			2			3		1	3		2	1
	5	Acquire Employment Skills Leading To Industry-Ready Engineers	2		2			2			3		1	3		1	1

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Machine-I BTEEC401	1	Understand different types, construction and principle of single phase transformer and its application	2		2									1	2		
	2	Classify different types of connections of 3 phase transformer, and understand the parallel operations, Phase Conversion concept. Design of equivalent circuit and various test of Transformer.		2										1	1		
	3	Apply Electromechanical energy conversion principle and calculate the magnetic force and torque of various system	2												1		
	4	Understand operating principle, Constructional features types, performance characteristics, armature reaction, commutation of dc generator and their applications	2	2	3	2								1	2		2
	5	Develop Torque equation and calculate Current, Power, Losses and efficiency of various types of DC motors and understand different characteristics, various methods of speed control	2	2	2	2								1	2		2
	6	differentiate the construction of various types of special machines like Reluctance machine, VRM, stepper motor, BLDC and analyse its application in the field.	2	2	2												

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System-I BTEEC402-O	1	Understand basic operation of power system, power system components and their characteristics.	1	2	3						1	1			2		
	2	Understand different types of power plants, construction, working and components. Factors describing economics of the power plants.	1	2	3						1	1			2		
	3	Major electric components, alternator, transformer, control and metering of the power system	2	2	3						2	2			2		
	4	Parameters calculation of transmission network like inductance, capacitance, conductance and resistance.	2	2	3						2	2			2		
	5	Develop the ability to implement the appropriate safety equipment for design of electrical power system with enhancing the efficiency of the transmission and distribution system.	2	1	3						2	2			2	2	
	6	Judge the suitability of installing overhead and underground power transmission strategies considering electrical, mechanical, performance, safety and economic constraints.	2	1	2						2	2			3	2	
	7	Choose the appropriate type of power generating station following norms and guidelines related to cost, environment, societal and ethical issues. Also review the different tariff systems available and determine the one most appropriate for a given scenario to optimize the revenue earned.	2	1	3						2	2			1		
	8	Recognize the need to continuously follow the advancements in technology and incorporating them in the present system to improve efficiency	2	1	1		2				3	3			1		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Installation and Estimation BTEEC403 -O	1	To Prepare Estimates And Costing Of Electrical Installation Of Power System				3	2				2				3		1
	2	To Understand Procedures Of Contracting And Purchase	2								2			3		2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Numerical Method and Programming BTEEC404	1	To Study And Understand Matlab Programming.	1				3								3		1
	2	To Review Mathematical Concepts .	2	3	1										2		
	3	To Develop Computer Program For Linear And Nonlinear Equations.	1		2	3									2		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Product Design Engineering (BTID405)	1	Create Simple Mechanical Or Other Designs	1	1	2		2								2	2	
	2	Create Design Documents For Knowledge Sharing	1	1	1		2				2	2			2	1	
	3	Manage Own Work To Meet Design Requirements							1		2		3		1	1	
	4	Work Effectively In A Team	1				1			1	3		2		1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Solid State Devices BTEEE406A	1	To study construction and characteristics of solid state devices.	2			2	2							1			
	2	To apply operational amplifier models in circuits employing negative feedback		3	1	1			1			1					
	3	To design electronics circuit using Timer IC and voltage regulators.		2	3	2	2		1								
	4	To perform analysis of amplifiers using small signal models for the circuit elements.			2		1	2				2					
	5	To calculate the frequency response of circuits containing BJT, Op-Amp etc		2	2	2	2						2				

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Analog and Digital Electronics BTEEE-406B	1	To Review Basic Number System	3	2	1										1		
	2	To Understand Deign And Characteristics Of Digital Logic Gates.	3	2	1										1		
	3	To Study Different Techniques In Use Of Digital Circuits.	3	2	1										1		
	4	To Design Digital Systems	3	2	1										1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electromagnetic Theory BTEEE-406C	1	To understand vector relations in diff. forms	2												1		
	2	To analyze diff. laws and their solution	2		2										1		
	3	To study about magneto static	2	1											1		
	4	To understand time varying field and effect of magnetism in transmission line	2	1											1		
	5																

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Industrial safety BTEEE-407A	1	To understand importance of safety in industrial environment.	1	2										2	1		
	2	To understand different safety procedures in an industrial environment.	1	2										2	1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Introduction to non Conventional Energy Sources BTEEOE407-B	1	Review Energy Scenario.	2					1	3					2		3	2
	2	Understand Basic Concepts, Construction And Operational Features Of Different Non-Conventional Energy Sources.	2	1				1	3					2		3	2

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Training/Internship /Industrial Training	1	Explore Career Alternatives Prior To Graduation	2		2			2			3		1	3		2	1
	2	Integrate Theory And Practical Approach	2		2			2			3		1	3		2	1
	3	To Develop The Ability As A Problem Solver Using Practical Approach	2		2			2			3		1	3		2	1
	4	Develop Communication, Interpersonal And Other Critical Skills Required For Interview Process	2		2			2			3		1	3		2	1
	5	Acquire Employment Skills Leading To Industry-Ready Engineers	2		2			2			3		1	3		1	1

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Machine -II BTEEC501	1	Understand Principle Of Operation Of Ac Machines	3	3	2	3											
	2	Analyze The Concept Of Steady State Analysis In Ac Machines	3	3	3	3											
	3	Study Different Methods Of Speed Control Of Ac And Dc Motor	3	3	3	3	2							2			
	4	Study Importance And Procedure Of Different Performance Test On Ac And Dc Motor	3	3	3	2	2							2			
	5	Determine Different Operating Characteristics Of Ac And Dc Machines	3	3	3	2	2										
	6	Understand Operation & Application Of Special Machines	1	2	1	2											

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System -II BTEEC502-O	1	Understand Different Parameters Of Power System Operation And Control	3	3	2	3	1	2			2			3	1		
	2	Understand Load Flow And Different Methods Of Reactive Power Control	3	3	2	3	3	2			3			2	2		
	3	To Understand Sequence Network Of Power System Elements	3	3	2	3	3	2			2			1	2		
	4	To Understand Different Methods Of Fault Analysis And Stability Study	3	3	2	3	3	2			2			3	2	2	
	5	Study Transient Stability Analysis & Equal Area Criteria	3	3	2	3	3	2			3			3	2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEL503 Microprocessor and micro Controller	1	To Know The Architecture Of 8085 And 8051	2	1											2		
	2	To Understand Interfacing And Interrupt Features Of 8085 And 8051.	2	1	1	1									1		
	3	To Develop Program For Basic Applications	2	2	3	2	1								2		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTHM304 Value Education, Human Rights and Legislative Procedures [MOOC/Swayam/NPTEL]	1	To understand value of education and self-development									**1**			**1**			1
	2	To develop good values and character To know Human right and legislative procedure								**2**	**2**						2
	3	To know Human right and legislative procedure									**1**			**1**			

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Illumination Engineering BTEEE505	1	To get the detailed information about modern lamps and their accessories.	**2**	**1**	-										2		
	2	To get detailed insight of indoor and outdoor illumination system components, its controls and design aspects. To introduce the modern trends in the lighting	**2**	**2**	**2**	**1**									2	1	
	3	To know the requirements of energy efficient lighting.	**2**	**2**	**2**				**2**						2	1	
	4	To introduce the modern trends in the lighting	**1**	-					**2**						2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Advances in Renewable Energy Sources.BTEEE505	1	To know the Principle of Energy Conversion Techniques from biomass,geothermal and hybrid energy systems	2					2	3					2		3	
	2	**To understand effect of air pollution and ecosystems**	2					2	3					2		3	
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1.Electrical Mobility.BTEEOE506	1	Understand The Need For Electrical Mobility, Environmental Benefits And Classification Of Electrical Vehicles	-	2	-	-	-	3	3	-	-	-	-	-	-	-	-
	2	Know Different Energy Storage Technologies Used For Electrical Mobility	-	3	-	-	-	2	2	-	-	-	-	-	-	-	-
	3	Identify Different Electrical Machines And Associated Power Converters For A Particular Application	-	3	-	2	1	-	-	-	-	-	-	-	-	-	-
	4	Prepare A Simulation Model Of Basic Electrical Vehicle And Analyze Its Performance	-	-	3	-	-	-	-	-	-	-	2	-	-	-	-

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power Plant Engineering.BTEEOE506	1	To Review Basic Components Of Power System, Energy Sources			2									3			
	2	To Understand Principle Of Construction And Operation Of Different Conventional Power Plants		2													
	3	Analyse The Working Of Conventional Power Plant	2	3		3											
	4	Design The Layout Of Thermal And Hydro Power Plant With Ancillary Services	3	2	3	2								2			
	5	Analyze The Limitations And Advantages Of Nuclear Power Plant		2	2	3											
	6	Understand The Significance And Working Of Renewable Energy Sources						1	2	1							
	7	Understand The Working Of Co-Generation/Combined Power Plant	3	3		3			2								

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Design and Analysis of Algorithm BTEEOE506	1	To know fundamental characteristic of an algorithm.	2	2											1		
	2	To understand strategy of algorithm formation,	2	1	1										2		
	3	To develop different algorithm.	2	2	2	1	1								2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC601 Control System	1	To Know Different Basic Concepts And Components Of A Control System	3											3	3		
	2	To Derive Transfer Functions Of Basic Control System Components	3	3		2								3	3		
	3	To Perform Stability Analysis Using Time Domain And Frequency Domain Response On A Given System	3	3		2								3	3		
	4	To Design And Analyze Pid Controller.	3		3									3	3		
	5	To Understand And Analyze State Variable Technique.	3	3										3	3		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC602 -OPrinciples of Electrical Machine Design	1	To understand principles of electric machine design.	2			1								3	2		
	2	To design different components of electric machine.	2	2	2	1								3	2		1
	3	To design Transformer	3	2	2	2								2	1		
	4	To understand CAD and use it for transformer design	2	1		2								2			1
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC603 -OPower Electronics	1	To Review Principle Of Construction, Operation And Characteristics Of Basic Semiconductor Devices	2	2											2		
	2	To Understand And Analyze The Performance Of Controlled And Uncontrolled Converters.	2	2											2		
	3	To Understand And Analyze The Performance Of Dc To Dc Converters. Dc To Ac Converters	3	3											2		
	4	To Understand And Analyze Performance Of Ac Voltage Controllers.	3	3											2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Industrial automation and ControlBTEEE604	1	To understand construction and working principle of different industrial measurement systems.	2	1	1						1	2			2		
	2	To understand new trends in industrial process control.	2	1	1						1	2					
	3	To Understand Industrial Control Systems	1	1	1						1	2			2		
	4	Understand different layers of the industrial automation	1	1	1						1	2				1	
	5	Understand the fieldbus and communication in industrial automation	2	2	1						1	2			2		
	6	Different drives and online control in industrial automation	2	1	1						1	2					
	7	Different Controllers used in industrial automation	2	1	1						1	2					
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Design of Experiments BTEEE604	1	To understand experimental design principles.	**2**	**2**	**1**										2		
	2	To understand different experimental design used in industry.	**2**	**2**	**1**		**2**								2		
	3	To deign computer experiments to use with engineering problems.	**2**	**1**	**2**	**2**	**2**								2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Artificial neural NetworkBTEEE604	1	To review basic principles of neuron structure.	**2**	**1**											1		
	2	To understand building blocks artificial neural network.	**2**	**1**											1		
	3	**To understand different networks of ANN.**	**2**	**1**											1		
	4	**To develop different algorithm for learning.**	**2**	**2**	**2**	**2**									2		
	5	**To study and understand Fuzzy neural networks**	**2**	**1**											1		
	6																
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
COMPUTER AIDED ANALYSIS AND DESIGN	1	To Study Different Computer Aided Tools In Engineering Application	2	1	2	2	3	NA	NA	NA	2	1	1	2	2	1	NA
	2	To Understand The Functionality Of Different Engineering Software	2	1	1	1	3	NA	NA	NA	2	NA	1	1	2	1	NA
	3	To Apply Different Software In Engineering Design.	2	2	2	1	3	NA	NA	NA	1	NA	NA	NA	1	1	NA

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Switch Gear and Protection BTEEC605	1	To Understand Principles Of Protective Relaying.	-	-	-	1	-	-	-	-	-	-	-	3	-	-	-
	2	To Understand Principle Of Construction, Operation And Selection Of Different Type Of Circuit Breaker Used In Power System.	-	-	-	1	-	-	-	-	-	-	-	3	-	-	-
	3	To Understand Different Protection Schemes Used In Power System Operation	1	1	-	2	-	-	-	-	-	-	-	3	-	-	-
	4	Apply Principles Of Power System Protection Using Digital And Numerical Protection Techniques	1	1	-	2	-	-	-	-	-	-	-	2	-	-	-
	5	Understand The Need For Insulation Coordination And Select Appropriate Insulation Ratings For Substation Equipment	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Mechatronics BTEEC605	1	To understand concept of mechatronics.	2				2							2	2		
	2	To understand sensor and transducer construction and operation.	3		2									2	3	2	3
	3	To understand microprocessor architecture and operation.	3	3	3									3	2		
	4	To understand principle of construction and operation of PLC				2	3								3	2	
	5	To design a robo for engineering application.	2		3									2			3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Rural Technology and Community Development BTEEOE606	1	To analysis data, information and knowledge. To understand concepts of marketing. To identify projects and work for community development To understand and analyze business model.							3		2		3		1	2	
	2	To understand concepts of marketing.									3		2	3			
	3	To identify projects and work for community development							3	2		2	3			3	
	4	To understand and analyze business model.										3	2		2		2
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Project Management BTEEOE606	1	To Understand Concepts Of Project Management	-	-	-	-	-	-	-	-	-	-	3	2	3	-	-
	2	To Develop Project Plan	-	-	-	-	-	-	-	-	-	3	-	2	-	2	-
	3	To Understand The Project Implementation Strategy	-	-	-	-	-	-	-	-	2	-	-	3	-	-	3
	4	To Analyze Post Project Affects	-	-	-	-	-	-	-	-	3	-	-	-	-	3	-

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Knowledge ManagementBTEEOE606	1	To understand different components knowledge management.					3							2	2		
	2	To conduct knowledge audit and knowledge management practices in organization.						2		2	3	3	2	3		3	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System Operation & Control BTEEC701	1	Understand fundamental concepts power system	3	3	2	3	1	2						3	2		
	2	Obtain the mathematical model of synchronous machine, excitation & speed governing systems	3	3	2	3	3	3						2	1		
	3	Analyze the transient stability of power system using numerical solutions of swing equation	2	3	2	2	2	2						1	2		
	4	Understand the economic operation of power system	3	2	2	3	2	1						3		3	
	5	Explain the methods of Voltage control	2	3	2	2	3	2						3	1		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
High Voltage Engineering BTEEC702	1	Illustrate the concept of electric field stresses, applications of insulating materials and methods for Non-destructive testing of equipment like transformers, insulators, isolators, bushings, lightning arrestors, cables, circuit breakers and surge diverters.	3											1	2		
	2	Explain the breakdown process in solid, liquid, and gaseous materials	3											1	2		
	3	Analyze methods for generation and measurement of High Voltages and Currents (both ac and dc)	2	3										1	2		
	4	Describe the phenomenon of over-voltage and choose appropriate insulation coordination levels based on IS & IEC Standards.	2	2		3								1	2		
	5	Understand perspectives of layout of high voltage laboratory & testing facilities.	3											1	2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Drives BTEEC703	1	Analyze The Dynamics Of The Electrical Drives System.	3	3	2	2	-	-	-	-	2	-	-	3	-	-	-
	2	Use Various Control Techniques For Controlling The Speed Of Ac And Dc Motors.	3	3	-	2	-	-	-	-	2	-	-	3	1	-	-
	3	Analyze The Ac And Dc Drives.	3	3	2	2	-	-	-	-	3	-	-	3	1	-	-
	4	To Select/Recommend The Appropriate Drive According To The Particular Applications.	3	3	-	2	-	-	-	-	2	-	-	3	1	-	-
	5	State The Recent Technology Of Ac And Dc Drive	3	3	-	-	-	-	-	-	2	-	-	3	1	-	-
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Special Purpose Electrical Machines BTEEE704	1	Demonstrate construction, working principle, and application of various types of special purpose electrical machines	3	2	2	1								1	1		
	2	Select a special Machine for a particular application	3	2	2	1								1	2		
	3	Demonstrate behavior of induction generator and induction machine	2	1	1									1		2	
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Energy Audit and Conservation BTEEE705	1	1. To understand the basic process involved in the energy audit and the terminologies associated in the process.	1	2				1	2						1	2	1
	2	2. To be able to develop audit reports of any firm including large and small scale industries, residential and commercial establishments.	2					1	1								
	3	3. To select and comment on the appropriate method for the planning and monitoring of any energy conservation project.	1										2	1	1	1	
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
HVDC Transmission and FACTS BTEEE705D	1	To Understand Importance, Configuration And Types Of Hvdc Transmission	-	3	-	-	-	2	1	-	-	-	-	3	1	1	2
	2	To Analyse The Operation Of Hvdc Converter, System Control And Protection	-	-	3	2	-	-	-	-	-	-	-	2	3	1	1
	3	To Understand The Concept Of Facts, Their Role, Type And Functionality	-	-	2	3	-	-	-	-	-	-	-	3	2	3	2
	4	To Analyze The Operation Of Static Series And Shunt Compensator	-	-	-	-	2	-	-	-	-	-	-	2	2	2	1

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Power Quality BTEEE705	1	he in-depth understanding of power quality issues & standards.	2	1				2						1	1	1	
	2	Equipment's.	2				2	1						1	2		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1.Power Management Integrated CircuitsBTEEO801A	1	Understand Why Power Management Circuits Are Needed In A Vlsi System	2	2	2										2		
	2	Understand The Concept Behind Power Management Circuits	2	2	2										2		
	3	Design A Linear (Ldo) And Switching Regulator (Dc-Dc Converter)	3	2	2										2		
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
2.DC Power Transmission Systems	1	To understand concepts of DC-DC converter	2												3		
	2	To design HVDC systems		3												3	
	3	To do analysis of Long Transmission Lines			3												
	4	To understand the materials and its impact on Environment	2											3			2

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
High Power Multilevel Converters	1	Analyse And Design Different Types Of Converter	1	1	1										1		
	2	Understand Neutral Point Clamped Converter	2	1	2										1		
	3	Understand The Design Of Multi Pulse Transformer And Gate Driver Circuit	2	1	2										1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Fuzzy Sets, Logic and Systems & Applications	1	To Develop The Fundamental Concepts Such As Fuzzy Sets, Operations And Fuzzy Relations	3	2	3		2							3	3		1
	2	To Lean About The Fuzzification Of Scalar Variables And The Defuzzification Of Membership Functions	3	2	3		2							3	3		1
	3	To Learn Three Different Inference Methods To Design Fuzzy Rule Based System.	3	2	3		2							3	3		1
	4	To Develop Fuzzy Decision Making By Introducing Some Concepts And Also Bayesian Decision Methods	3	2	3		2							3	3		1
	5	To Learn Different Fuzzy Classification Methods	3	2	3		2							3	3		1

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
5.The Joy of Computing using Python	1	Practice And Culture The Art Of Programming With Python	2	1	NA	1	NA	NA	NA	NA	NA	NA	NA	1	1	NA	NA
	2	Know The Concept Of Functions In Python.	2	1	NA	1	NA	NA	NA	NA	NA	NA	NA	2	1	NA	NA
	3	Learn How To Design And Program Python Applications	2	1	NA	1	NA	NA	NA	NA	NA	NA	NA	2	1	NA	NA
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Introduction to Industry 4.0 and Industrial Internet of Things	1	Understand Theory And Practice Related To Industrial Iot Systems	2	2	1	-	-	-	-	-	-	-	-	-	1	-	-
	2	Identify, Formulate And Solve Engineering Problems By Using Industrial Iot.	2	2	1	-	-	-	-	-	-	-	-	-	2	-	-
	3	Implement Real Field Problem By Gained Knowledge Of Industrial Applications With Iot Capability.	2	2	2	-	-	-	-	-	-	-	-	-	2	-	-
	4	Understand, Apply The Knowledge Of Various Technologies Such As Cyber Physical Systems (Cps), Internet Of Things (Iot), Cloud Computing, Machine Learning, And Data Analytics In The Field Of Industrial Internet Of Things.	2	2	2	-	-	-	-	-	-	-	-	-	1	-	-
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Entrepreneurship Essentials	1	Address Multi Disciplinary Audiences	1			3				2				2	2	3	3
	2	Understand Key Issues Faced By Entrepreneurs And Managers At Different Stages Of Life Cycle For Aspiring Entrepreneurs				3								3		1	
	3	Analyze And Understand Financial Aspects	2				3							3	2		2
	4	Understand Legal Aspects And Fund Raising Issues For New Ventures		2			3		3	3					3		3

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Project - II (BTEEP803)	1	Students Shall Be Able To Acquire Knowledge About Electrical Components And Techniques.	3	3	3	2	2							3	3	1	
	2	Students Shall Be Able To Enhance Their Knowledge Of The Assembling Of Electrical Circuits Along With Power Electronic Devices On Pcb (Printed Circuit Board)	3	3	3	2	2							3	3	1	
	3	Design And Develop Small Electrical Application-Based Projects Along With Power Electronics Devices	3	3	3	2	2							3	3	1	

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System-I Lab BTEEL409-O	1	Understand basic operation of power system, power system components and their characteristics.	1	2	3						1	1			2		
	2	Understand different types of power plants, construction, working and components. Factors describing economics of the power plants.	1	2	3						1	1			2		
	3	Major electric components, alternator, transformer, control and metering of the power system	2	2	3						2	2			2		
	4	Parameters calculation of transmission network like inductance, capacitance, conductance and resistance.	2	2	3						2	2			2		
	5	Develop the ability to implement the appropriate safety equipment for design of electrical power system with enhancing the efficiency of the transmission and distribution system.	2	1	3						2	2			2	2	
	6	Judge the suitability of installing overhead and underground power transmission strategies considering electrical, mechanical, performance, safety and economic constraints.	2	1	2						2	2			3	2	
	7	Choose the appropriate type of power generating station following norms and guidelines related to cost, environment, societal and ethical issues. Also review the different tariff systems available and determine the one most appropriate for a given scenario	2	1	3						2	2			1		
	8	Recognize the need to continuously follow the advancements in technology and incorporating them in the present system to improve efficiency	2	1	1		2				3	3			1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System -II Lab BTEEL508-O	1	Understand Different Parameters Of Power System Operation And Control	3	3	2	3	1	2			2			3	1		
	2	Understand Load Flow And Different Methods Of Reactive Power Control	3	3	2	3	3	2			3			2	2		
	3	To Understand Sequence Network Of Power System Elements	3	3	2	3	3	2			2			1	2		
	4	To Understand Different Methods Of Fault Analysis And Stability Study	3	3	2	3	3	2			2			3	2	2	
	5	Study Transient Stability Analysis & Equal Area Criteria	3	3	2	3	3	2			3			3	2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System Operation & Control LAB BTEEL706	1	Understand fundamental concepts power system	3	3	2	3	1	2						3	2		
	2	Obtain the mathematical model of synchronous machine, excitation & speed governing systems	3	3	2	3	3	3						2	1		
	3	Analyze the transient stability of power system using numerical solutions of swing equation	2	3	2	2	2	2						1	2		
	4	Understand the economic operation of power system	3	2	2	3	2	1						3		3	
	5	Explain the methods of Voltage control	2	3	2	2	3	2						3	1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Mathematics III (BTBS301)	1	Understand the concept of Laplace transform and inverse Laplace transform of elementary functions and apply it to solve the linear differential equations with constant coefficients having their applications in mechanical, electrical, chemical, communication etc. systems.	**3**	**3**		**1**									2		
	2	Apply the concept of Fourier transform to solve the boundary value problems, problems in signal processing and communication system.	**3**	**3**		**1**									2		
	3	Apply partial differential equations to solve heat equation, wave equation and Laplace equation etc.	**3**	**3**											1		
	4	Analyze conformal mapping, transformation and perform contour integration of complex function in the study of electromagnetics and signal processing.	**3**	**2**											1		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Machine -I (BTEEC302)	1	To understand principle, different types, and construction of single phase transformer with its application	2	2	2												
	2	Classify different types of connections of 3 phase transformer, and understand the parallel operations, Phase Conversion concept. Design of equivalent circuit and various test of Transformer.	2	2	2										2		
	3	Apply Electromechanical energy conversion principle and calculate the magnetic force and torque of various system	1	1													
	4	Understand operating principle, Constructional features types, performance characteristics, armature reaction, commutation of dc generator and their applications	3	3	3	2								2	2	1	
	5	Develop Torque equation and calculate Current, Power, Losses and efficiency of various types of DC motors and understand different characteristics, various methods of speed control	3	3	3	2								2	2		
	6	Differentiate the construction of various types of special machines like Reluctance machine, VRM, stepper motor, BLDC and analyse its application in the field.	1	1													

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical and Electronics measurement (BTEEC303)	1	TO UNDERSTAND PHILOSOPHY OF MEASUREMENT	**3**	**2**		**2**							**1**		3		1
	2	TO UNDERSTAND DIFFERENT METHODS ANALOG AND DIGITAL MEASUREMENT	**3**	**2**	**2**								**1**		3		1
	3	TO STUDY THE PRINCIPLE OF CONSTRUCTION AND OPERATION OF DIFFERENT TRANSDUCER AND DISPLAY METHODS	**3**		**2**	**2**							**1**		3		1

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Basic Human Rights (BTHN304)	1	Understand the history of human rights						2									
	2	Learn to respect others caste, religion, region and culture															
	3	Be aware of their rights as Indian citizen															
	4	Understand the importance of groups and communities in the society															
	5	Realize the philosophical and cultural basis and historical perspectives of human rights									3						2
	6	Make them aware of their responsibilities towards the nation								2		2		1		2	

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering Material Science (BTES305)	1	Classify various properties of electrical engineering materials,	2	3		3										1	
	2	Categories dielectric materials and relate the dielectric polarization with frequency and temperature	3	2		3										1	
	3	Illustrate semiconductor properties with respect to PN junction diode	3	3		3									2		
	4	Discover and illustrate the applications of magnetic materials in Electrical Engineering	3	2		2									3		
	5	Discover and illustrate the applications of X-ray diffraction, ultrasonics and other non-destructive testing methods	3	2		1									3		
	9																

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Network Thoery (BTEEC401)	1	REVIEW BASIC COMPONENTS OF ELECTRIC NETWORK	2	2	2												
	2	UNDERSTAND NETWORK THEOREMS TO SIMPLIFY COMPLEX NETWORKS.	1	1											2		
	3	UNDERSTAND TRANSIENT ANALYSIS IN ELECTRICAL CIRCUITS AND ANALYZE THE POWER SYSTEM STABILITY.	3	3		3	2								2		
	4	APPLY LAPLACE TRANSFORM FOR ELECTRIC NETWORK ANALYSES AND EVALUATE THE PARAMETERS OF TWO PORT NETWORKS	2	2		2									2		
	5	DESIGN OF VARIOUS TYPES OF FILTERS.	2	2		2									1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System (BTEEC402)	1	Working of Conventional Power Plant	3	3													2
	2	**Design Overhead Transmission Lines**				2											
	3	**Investigate different types of materials for Transmission lines**	3				2									2	
	4	**Analyze the performance of different transmission lines**		3		2									3		
	5	**Classify different types of distribution system**							1						3		2

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Machines-II (BTEEC403)	1	To understand principle of operation of AC machines	1												1		
	2	To analyze the concept of steady state analysis in AC machines.	2	1													
	3	To study different methods of speed control of AC and DC motor	3	3	2	2								2	2		
	4	To study importance and procedure of different performance test on AC and DC motor	3	3	2	2								2	1		
	5	To determine different operating characteristics of AC and DC machines	1														
	6	To study different types of special purpose machine	2	1												1	

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Analog and Digital Electronics (BTBS404)	1	Recall & Recognize construction & characteristics of BJT, along with demonstration & analysis of transistor as an amplifier.	2	2	2										2	1	
	2	Demonstrate and Analyze Operational Amplifier circuits and their applications	2	2	2										2	1	
	3	To review basic number system & to understand design and characteristics of digital logic gates.	2	2	2										2	1	
	4	Understand digital logic gate characteristic and demonstrate & design latches, Flip-Flops counter and shift registers	2	2	2										2		
	5	Describe, Illustrate and Analyze Combinational Logic circuits, Simplification of Algebraic Equations using Karnaugh Maps and Quine McClusky Techniques.	3	3	3	1									2		
	6	Describe, Illustrate and Analyze Combinational Logic circuits also able to demonstrate and design logic circuits by multiplexer , encoder & decoder	3	3	3	1									2	1	

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electromagnetic Field Theory (BTEEPE405)(A)	1	To understand vector relations in diff. forms	2												1		
	2	To analyze diff. laws and their solution	2		2										1		
	3	To study about magneto static	2	1											1		
	4	To understand time varying field and effect of magnetism in transmission line	2	1											1		
	5																

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Signal and System (BTEEPE405)(B)	1	Understand the basics of Signals and Systems required for all Electrical Engineering related courses.	2	1	2										1	1	
	2	Understand classification of systems and their properties	2	1	2										2		
	3	Analyze time domain representation LTI System based on convolution and differential equation	3	2	3	2									2	1	
	4	Apply concepts of Signals and Systems and its analysis using Laplace transform and Z Transform	3	2	3	2									2	1	
	5	Understand and analyze Fourier Series and Fourier Transform	3	2	3	2									2		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Advanced Renewable Energy Sources (BTEEPE405)	1	UNDERSTAND THE BASIC OF RENEWABLE ENERGY SOURCES AND FUEL CELLS	1						3					2		3	
	2	UNDERSTAND THE CONCEPT OF WIND POWER PLANT	1	1					3					1		3	
	3	UNDERSTAND THE CONCEPT OF PHOTOVOLTAIC POWER PLANT WHICH INCLUDE THE BASIC CONCEPT OF SOLAR POWER ENERGY GENERATION AND APPLICATIONS	1	1					3					1		3	
	4	UNDERSTAND THE CONCEPT OF BIO-ENERGY (BIOMASS & BIOGAS) AND INDUCTION GENERATOR	1		1				3					1		3	
	5	UNDERSTAND THE BASICS OF ENERGY STORAGE SYSTEM AND INTER CONNECTION OF VARIOUS ENERGY SOURCES WITH GRID	1						3					1		3	

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electronics Devices and Circuit(BTEEPE405)	1	Design and Analysis BJT Circuit	2	1	2										2		
	2	Design and Analysis JFET and MOSFET Circuit	2	1	1										2		
	3	To understant Different types of Power Amplifier	2	1	2										2		
	4	To review principle of operation of feedback amplifier	2	1											1		
	5	to understant and Design sinusoidal and non Sinosidal Oscillator	2												1		

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC501 Electrical Machine-II	1	UNDERSTAND PRINCIPLE OF OPERATION OF AC MACHINES	2	2	2	3									2		
	2	ANALYZE THE CONCEPT OF STEADY STATE ANALYSIS IN AC MACHINES	3	3	3	3									1		
	3	STUDY DIFFERENT METHODS OF SPEED CONTROL OF AC AND DC MOTOR	3	3	3	3	2							2	2		
	4	STUDY IMPORTANCE AND PROCEDURE OF DIFFERENT PERFORMANCE TEST ON AC AND DC MOTOR	3	3	3	3	2							2	2		
	5	DETERMINE DIFFERENT OPERATING CHARACTERISTICS OF AC AND DC MACHINES	3	3	3	2	2								1		
	6	UNDERSTAND OPERATION & APPLICATION OF SPECIAL MACHINES	1	2	1	2											

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC502 Power System-II	1	Understand different parameters of power system operation and control	3	3	2	3	1	2			2			3	1		
	2	Understand load flow and different methods of reactive power control	3	3	2	3	3	2			3			2	2		
	3	To understand Sequence network of power system elements	3	3	2	3	3	2			2			1	2		
	4	To understand different methods of fault analysis and stability study	3	3	2	3	3	2			2			3	2	2	
	5	Study transient stability analysis & Equal area criteria	3	3	2	3	3	2			3			3	2		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEL503 Microprocessor and micro Controller	1	To know the architecture of 8085 and 8051.	3												1		
	2	To understand interfacing and interrupt features of 8085 and 8051.	3	2			1								2		
	3	To develop program for basic applications.	3	3	2										3		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
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BTHM504 Value Education, Human Rights and Legislative Procedures [MOOC/Swayam/NPTEL]	1	To understand value of education and self-development									1			1			1
	2	To develop good values and character To know Human right and legislative procedure								2	2						2
	3	To know Human right and legislative procedure									1			1			
	4																

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Illumination Engineering BTEEE505	1	To get the detailed information about modern lamps and their accessories.	2	1	-										2		
	2	To get detailed insight of indoor and outdoor illumination system components, its controls and design aspects. To introduce the modern trends in the lighting	2	2	2	1									2	1	
	3	To know the requirements of energy efficient lighting.	2	2	2				2						2	1	
	4	To introduce the modern trends in the lighting	1	-					2						2		
	5																
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Advances in Renewable Energy Sources.BTEEE505	1	Know the principle of energy conversion technique from biomass, geothermal and hybrid energy systems.	2					2	3					2		3	
	3	**Understand effects of air pollution and ecosystems.**	2					2	3					2		3	

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1.Electrical Mobility.BTEEOE506	1	UNDERSTAND THE NEED FOR ELECTRICAL MOBILITY, ENVIRONMENTAL BENEFITS AND CLASSIFICATION OF ELECTRICAL VEHICLES	-	2	-	-	-	3	3	-	-	-	-	-	-	-	-
	2	KNOW DIFFERENT ENERGY STORAGE TECHNOLOGIES USED FOR ELECTRICAL MOBILITY	-	3	-	-	-	2	2	-	-	-	-	-	-	-	-
	3	IDENTIFY DIFFERENT ELECTRICAL MACHINES AND ASSOCIATED POWER CONVERTERS FOR A PARTICULAR APPLICATION	-	3	-	2	1	-	-	-	-	-	-	-	-	-	-
	4	PREPARE A SIMULATION MODEL OF BASIC ELECTRICAL VEHICLE AND ANALYZE ITS PERFORMANCE	-	-	3	-	-	-	-	-	-	-	2	-	-	-	-

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power Plant Engineering.BTEEOE506	1	Analyze the working of Conventional Power Plant	2	3		3									3		
	2	**Design the layout of thermal and Hydro Power plant along with ancillary services**	3	2	3	2											2
	3	**Analyse the limitations and advantages of Nuclear Power Plant**		2	2	3									2		
	4	**Understand the significance and working of Renewable Energy Sources**						1	2	1					3	3	
	5	**Understand the working of Co-generation/Combined Power Plants**	3	3		3			2						2		2

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Design and Analysis of Algorithms BTEEOE506	1	To know fundamental characteristic of an algorithm.	2	2											1		
	2	To understand strategy of algorithm formation,	2	1	1										2		
	3	To develop different algorithm.	2	2	2	1	1								2		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC601 Control System	1	To know different basic concepts and components of a control system.	3											3	3		
	2	To derive transfer functions of basic control system components.	3	3		2								3	3		
	3	To perform stability analysis using time domain and frequency domain response on a given system.	3	3		2								3			
	4	To design and analyze PID controller.	3		3									3	3		
	5	To understand and analyze state variable technique	3	3										3	3		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC602 Principles of Electrical Machine Design	1	To understand principles of electric machine design.	2			1								3	2		
	2	**To design different components of electric machine.**	2	2	2	1								3	2		1
	3	**To design Transformer**	3	2	2	2								2	1		
	4	**To understand CAD and use it for transformer design**	2	1		2								2			1

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
BTEEC603 Power Electronics	1	TO REVIEW PRINCIPLE OF CONSTRUCTION, OPERATION AND CHARACTERISTICS OF BASIC SEMICONDUCTOR DEVICES				1								3	2		
	2	**TO UNDERSTAND AND ANALYZE THE PERFORMANCE OF CONTROLLED AND UNCONTROLLED CONVERTERS.**				1								3	2		
	3	**TO UNDERSTAND AND ANALYZE THE PERFORMANCE OF DC TO DC CONVERTERS. DC TO AC CONVERTERS**	1	1		2								3	2		
	4	**TO UNDERSTAND AND ANALYZE THE PERFORMANCE OF DC TO DC CONVERTERS. DC TO AC CONVERTERS**	1	1		2	2							2	2		
	5	**TO UNDERSTAND AND ANALYZE PERFORMANCE OF AC VOLTAGE CONTROLLERS.**	1	1		3	2							2	2		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Industrial automation and ControlBTEEE604(A)	1	TO UNDERSTAND CONSTRUCTION AND WORKING PRINCIPLE OF DIFFERENT INDUSTRIAL MEASUREMENT SYSTEMS.	2	1	1						1	2			2		
	2	TO UNDERSTAND NEW TRENDS IN INDUSTRIAL PROCESS CONTROL.	2	1	1						1	2					
	3	TO UNDERSTAND INDUSTRIAL CONTROL SYSTEMS	1	1	1						1	2			2		
	4	UNDERSTAND DIFFERENT LAYERS OF THE INDUSTRIAL AUTOMATION	1	1	1						1	2				1	
	5	UNDERSTAND THE FIELDBUS AND COMMUNICATION IN INDUSTRIAL AUTOMATION	2	2	1						1	2			2		
	6	DIFFERENT DRIVES AND ONLINE CONTROL IN INDUSTRIAL AUTOMATION	2	1	1						1	2					
	7	DIFFERENT CONTROLLERS USED IN INDUSTRIAL AUTOMATION	2	1	1						1	2					

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Design of Experiment BTEEE604(B)	1	To understand experimental design principles.	**2**	**2**	**1**										2		
	2	To understand different experimental design used in industry.	**2**	**2**	**1**		**2**								2		
	3	To deign computer experiments to use with engineering problems.	**2**	**1**	**2**	**2**	**2**								2		
	9																

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Artificial neural network. BTEEE604(C)	1	To review basic principles of neuron structure.	2	1											1		
	2	To understand building blocks artificial neural network.	2	1											1		
	3	**To understand different networks of ANN.**	2	1											1		
	4	**To develop different algorithm for learning.**	2	2	2	2									2		
	5	**To study and understand Fuzzy neural networks**	2	1											1		
	6																
	7																
	8																
	9																

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Switch Gear and Protection BTEEC605	1	TO UNDERSTAND PRINCIPLES OF PROTECTIVE RELAYING.	-	-	-	1	-	-	-	-	-	-	-	3	-	-	-
	2	TO UNDERSTAND PRINCIPLE OF CONSTRUCTION, OPERATION AND SELECTION OF DIFFERENT TYPE OF CIRCUIT BREAKER USED IN POWER SYSTEM.	-	-	-	1	-	-	-	-	-	-	-	3	-	-	-
	3	TO UNDERSTAND DIFFERENT PROTECTION SCHEMES USED IN POWER SYSTEM OPERATION	1	1	-	2	-	-	-	-	-	-	-	3	-	-	-
	4	APPLY PRINCIPLES OF POWER SYSTEM PROTECTION USING DIGITAL AND NUMERICAL PROTECTION TECHNIQUES	1	1	-	2	-	-	-	-	-	-	-	2	-	-	-
	5	UNDERSTAND THE NEED FOR INSULATION COORDINATION AND SELECT APPROPRIATE INSULATION RATINGS FOR SUBSTATION EQUIPMENT	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Computer aided analysis and design BTEEE605	1	To Study different computer aided tools in engineering application	2	2		2	3				1				2		
	2	To understand the functionality of different engineering software.	2	2		2	3								2		
	3	To apply different software in engineering design.			1		1								1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Mechatronics BTEEC605	1	To understand concept of mechatronics.	2				2							2	2		
	2	To understand sensor and transducer construction and operation.	3		2									2	3	2	3
	3	To understand microprocessor architecture and operation.	3	3	3									3	2		
	4	To understand principle of construction and operation of PLC				2	3								3	2	
	5	To design a robo for engineering application.	2		3									2			3

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Rural Technology and community Development BTEEOE606	1	To analysis data, information and knowledge. To understand concepts of marketing. To identify projects and work for community development To understand and analyze business model.							3		2		3		1	2	
	2	**To understand concepts of marketing.**									3		2	3			
	3	**To identify projects and work for community development**							3	2		2	3			3	
	4	**To understand and analyze business model.**										3	2		2		2

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Project Management BTEEOE606(B)	1	To understand the concepts of Project Management											3	2	3		
	2	**To develop a project plan**										3		2		2	
	3	**To understand the project implementation strategy**									2			3			3
	4	**To analyse post project affects**									3					3	

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Knowledge Management BTEEOE606(C)	1	To understand different components knowledge management.					3							2	2		
	2	**To conduct knowledge audit and knowledge management practices in organization.**						2		2	3	3	2	3		3	3

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power System Operation & Control BTEEC701	1	Explain the fundamental concept of Power system	3	3	2	3	1	2						3	1		
	2	**Design the mathematical model of Synchronous machine**	3	3	2	3	3	3						2	2		
	3	**Design the mathematical model Excitation system and speed governing system**	3	3	2	3	3	3						2	2		
	4	**Analyse the transient stability of Power system using swing equation and equal area creteria**	2	3	2	2	2	2						1	2		
	5	**Analyze the economic operation of Power System**	3	2	2	3	2	1						3	2	2	
	6	**Explain the method of Voltage Control**	2	3	1	2	3	2						3	2		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
High Voltage Engineering BTEEC702	1	Illustrate the concept of electric field stresses, applications of insulating materials and methods for Non-destructive testing of equipment like transformers, insulators, isolators, bushings, lightning arrestors, cables, circuit breakers and surge diverters.	3											1	2		
	2	**Explain the breakdown process in solid, liquid, and gaseous materials**	3											1	2		
	3	**Analyze methods for generation and measurement of High Voltages and Currents (both ac and dc)**	2	3										1	2		
	4	**Describe the phenomenon of over-voltage and choose appropriate insulation coordination levels based on IS & IEC Standards.**	2	2		3								1	2		
	5	**Understand perspectives of layout of high voltage laboratory & testing facilities.**	3											1	2		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Drives BTEEC703	1	Understand dynamics of Drive System	3	3	2	2					2			3			
	2	Use Various Methods of Speed Control of AC and DC Drive	3	3		2					2			3	1		
	3	Ability to analyse the drive sysem	3	3	2	2					3			3	1		
	4	Select the Proficiency and Proper Drive system for particular application	3	3		2					2			3	1		
	5	Basic Knowledge of recent advancements in Electric Drives	3	3							2			3	1		

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Special Purpose Electrical Machines BTEEE704	1	Demonstrate construction, working principle, and application of various types of special purpose electrical machines	3	2	2	1								1	1		
	2	Select a special Machine for a particular application	3	2	2	1								1	2		
	3	Demonstrate behavior of induction generator and induction machine	2	1	1											2	

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Traction and Utilization BTEEE704	1	Identify types of Traction System.	1	1	1										1		
	2	Interprete Various Power supply in Electric Traction.	2	1													
	3	Analyze Various Traction Motors.	1	1		1									1		
	4	Define methods of Traction motor Control.	2	2													
	5	Elobrate Train movement & Breaking in Traction system.	1	1													
	6	Classify the indoor and outdoor Illumination system	1	1		1											

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Engineering System Design and Optimization BTEEE704	1	To understand different level optimization problem formulation.	2	1											2		
	2	To study novel methods in optimization.	2			2	2								1		
	3	To understand and develop genetic algorithm for engineering problems.	2	1											1		

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Financial Management BTEEE704	1	The students would be able to understand and define basic terminology used in finance and accounts	1	2											1		
	2	The students would be able to prepare& appraise Financial Statements and evaluate a company in the light of different measurement systems.	1	1	1									2	1		
	3	The students would be able to analyze the risk and return of alternative sources of financing.	2	1	1									2	1		
	4	Estimate cash flows from a project, including operating, net working capital, and capital spending.	1	1										2		1	
	5	To estimate the required return on projects of differing risk ,to estimate the cash flows from an investment project, calculate the appropriate discount rate, determine the value added from the project, and make a recommendation to accept or reject the project	1		1											1	
	6	To describe and illustrate the important elements in project finance Using financial calculatorand Excel in a variety of problems.	1	1													

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
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Digital Signal Processing BTEEE705(A)	1	1. Represent signals, systems and digital processing of analog signals.	**2**		**1**										1	1	
	2	2. Represent discrete time signals, systems and analysis of Discrete-Time Linear Time- Invariant Systems.	**3**	**2**											1		
	3	Apply digital signal processing techniques to analyze discrete time signals in time domain.	**2**		**1**												
	4	Apply digital signal processing techniques to analyze discrete time signals in frequency domain.	**2**	**1**													
	5	Design different filter structure	**1**		**2**										2		
	6	Validate system functionality and evaluate results.	**1**	**2**												1	

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Energy Audit and Conservation BTEEE705(B)	1	TO RECOGNIZE GLOBAL ENVIRONMENTAL ISSUES AND ROLE OF RENEWABLE AND NON-CONVENTIONAL ENERGY SOURCES							**3**		2				1		
	2	TO ESTIMATE ENERGY EFFICIENCY OPPORTUNITIES IN THERMAL-MECHANICAL SYSTEMS AND ELECTRICAL SYSTEMS				3								2		3	2
	3	TO ANALYZE ENERGY CONSERVATION PROPOSALS ECONOMICALLY AND PREPARE AUDIT REPORTS			2	3								**3**		2	3
	4																

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
HVDC Transmission and FACTS BTEEE705(D)	1	TO UNDERSTAND IMPORTANCE, CONFIGURATION AND TYPES OF HVDC TRANSMISSION	-	3	-	-	-	2	1	-	-	-	-	3	1	1	2
	2	TO ANALYSE THE OPERATION OF HVDC CONVERTER, SYSTEM CONTROL AND PROTECTION	-	-	3	2	-	-	-	-	-	-	-	2	3	1	1
	3	TO UNDERSTAND THE CONCEPT OF FACTS, THEIR ROLE, TYPE AND FUNCTIONALITY	-	-	2	3	-	-	-	-	-	-	-	3	2	3	2
	4	TO ANALYZE THE OPERATION OF STATIC SERIES AND SHUNT COMPENSATOR	-	-	-	-	2	-	-	-	-	-	-	2	2	2	1

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Electrical Power Quality BTEEE705	1	he in-depth understanding of power quality issues & standards.	2	1				2						1	1	1	
	2	Students will be able to understand working of power quality improving Equipment's.	2				2	1						1	2		
	3		-														
	4																
	5																
	6																
	7																
	8																
	9																

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Seminar BTEES709	1	To identify problem statement based on literature survey and area of interest.	3								2			2	3		
	2	**To identify research area for Problem solving by applying engineering knowledge.**		3		2							3		3	2	
	3	**To prepare seminar reports as per the standards using latest technological tools.**				2	3							2	3		3
	4	**To improve communication skills, presentation skills for their overall personality development.**										3	2				3
	5																
	6																
	7																
	8																
	9																

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Project Part -I BTEEP710	1	STUDENTS SHALL BE ABLE TO ACQUIRE KNOWLEDGE ABOUT ELECTRICAL COMPONENTS AND TECHNIQUES.	3	3	3	2	2							3	3	1	
	2	STUDENTS SHALL BE ABLE TO ENHANCE THEIR KNOWLEDGE OF THE ASSEMBLING OF ELECTRICAL CIRCUITS ALONG WITH POWER ELECTRONIC DEVICES ON PCB (PRINTED CIRCUIT BOARD)	3	3	3	2	2							3	3	1	
	3	DESIGN AND DEVELOP SMALL ELECTRICAL APPLICATION-BASED PROJECTS ALONG WITH POWER ELECTRONICS DEVICES	3	3	3	2	2							3	3	1	
	4																
	5																
	6																
	7																
	8																
	9																

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Field Training /Internship/Industrial Training III BTEEF711	1	EXPLORE CAREER ALTERNATIVES PRIOR TO GRADUATION.	2		2			2			3		1	3		2	1
	2	INTEGRATE THEORY AND PRACTICAL APPROACH	2		2			2			3		1	3		2	1
	3	TO DEVELOP THE ABILITY AS A PROBLEM SOLVER USING PRACTICAL APPROACH	2		2			2			3		1	3		2	1
	4	DEVELOP COMMUNICATION, INTERPERSONAL AND OTHER CRITICAL SKILLS REQUIRED FOR INTERVIEW PROCESS.	2		2			2			3		1	3		2	1
	5	ACQUIRE EMPLOYMENT SKILLS LEADING TO INDUSTRY-READY ENGINEERS	2		2			2			3		1	3		1	1

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1.Power Management Integrated Circuits	1	UNDERSTAND WHY POWER MANAGEMENT CIRCUITS ARE NEEDED IN A VLSI SYSTEM	2	2	2										2		
	2	UNDERSTAND THE CONCEPT BEHIND POWER MANAGEMENT CIRCUITS	2	2	2										2		
	3	DESIGN A LINEAR (LDO) AND SWITCHING REGULATOR (DC-DC CONVERTER)	3	2	2										2		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
2.DC Power Transmission Systems	1	To understand concepts of DC-DC converter	2												3		
	2	To design HVDC systems		3												3	
	3	To do analysis of Long Transmission Lines			3												
	4	To understand the materials and its impact on Environment	2											3			2

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
High Power Multilevel Converters	1	ANALYSE AND DESIGN DIFFERENT TYPES OF CONVERTER	1	1	1										1		
	2	UNDERSTAND NEUTRAL POINT CLAMPED CONVERTER	2	1	2										1		
	3	UNDERSTAND THE DESIGN OF MULTI PULSE TRANSFORMER AND GATE DRIVER CIRCUIT	2	1	2										1		

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Fuzzy Sets, Logic and Systems & Applications	1	TO DEVELOP THE FUNDAMENTAL CONCEPTS SUCH AS FUZZY SETS, OPERATIONS AND FUZZY RELATIONS	3	2	3		2							3	3		1
	2	TO LEAN ABOUT THE FUZZIFICATION OF SCALAR VARIABLES AND THE DEFUZZIFICATION OF MEMBERSHIP FUNCTIONS	3	2	3		2							3	3		1
	3	TO LEARN THREE DIFFERENT INFERENCE METHODS TO DESIGN FUZZY RULE BASED SYSTEM.	3	2	3		2							3	3		1
	4	TO DEVELOP FUZZY DECISION MAKING BY INTRODUCING SOME CONCEPTS AND ALSO BAYESIAN DECISION METHODS	3	2	3		2							3	3		1
	5	TO LEARN DIFFERENT FUZZY CLASSIFICATION METHODS	3	2	3		2							3	3		1

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
5.The Joy of Computing using Python	1	PRACTICE AND CULTURE THE ART OF PROGRAMMING WITH PYTHON	3	2	1										1		
	2	KNOW THE CONCEPT OF FUNCTIONS IN PYTHON.	3	2	1										1		
	3	LEARN HOW TO DESIGN AND PROGRAM PYTHON APPLICATIONS	3	2	1										1		

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		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Introduction to Industry 4.0 and Industrial Internet of Things	1	UNDERSTAND THEORY AND PRACTICE RELATED TO INDUSTRIAL IOT SYSTEMS	**2**	**2**	**1**	-	-	-	-	-	-	-	-	-	1	-	-
	2	IDENTIFY, FORMULATE AND SOLVE ENGINEERING PROBLEMS BY USING INDUSTRIAL IOT.	**2**	**2**	**1**	-	-	-	-	-	-	-	-	-	2	-	-
	3	IMPLEMENT REAL FIELD PROBLEM BY GAINED KNOWLEDGE OF INDUSTRIAL APPLICATIONS WITH IOT CAPABILITY.	**2**	**2**	**2**	-	-	-	-	-	-	-	-	-	2	-	-
	4	UNDERSTAND, APPLY THE KNOWLEDGE OF VARIOUS TECHNOLOGIES SUCH AS CYBER PHYSICAL SYSTEMS (CPS), INTERNET OF THINGS (IOT), CLOUD COMPUTING, MACHINE LEARNING, AND DATA ANALYTICS IN THE FIELD OF INDUSTRIAL INTERNET OF THINGS.	**2**	**2**	**2**	-	-	-	-	-	-	-	-	-	1	-	-

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Entrepreneurship Essentials	1	ADDRESS MULTI DISCIPLINARY AUDIENCES	1			3				**2**				2	2	3	3
	2	UNDERSTAND KEY ISSUES FACED BY ENTREPRENEURS AND MANAGERS AT DIFFERENT STAGES OF LIFE CYCLE FOR ASPIRING ENTREPRENEURS				3								**3**		1	
	3	ANALYZE AND UNDERSTAND FINANCIAL ASPECTS	2				3							**3**	2		2
	4	UNDERSTAND LEGAL ASPECTS AND FUND RAISING ISSUES FOR NEW VENTURES		2			3		3	**3**					3		3

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			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Project - II (BTEEP803)	1	STUDENTS SHALL BE ABLE TO ACQUIRE KNOWLEDGE ABOUT ELECTRICAL COMPONENTS AND TECHNIQUES.	3	3	3	2	2							3	3	1	
	2	STUDENTS SHALL BE ABLE TO ENHANCE THEIR KNOWLEDGE OF THE ASSEMBLING OF ELECTRICAL CIRCUITS ALONG WITH POWER ELECTRONIC DEVICES ON PCB (PRINTED CIRCUIT BOARD)	3	3	3	2	2							3	3	1	
	3	DESIGN AND DEVELOP SMALL ELECTRICAL APPLICATION-BASED PROJECTS ALONG WITH POWER ELECTRONICS DEVICES	3	3	3	2	2							3	3	1	

Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Power Electronics (BTEEL609)	1	DEFINE BASIC TERMINOLOGY OF POWER ELECTRONICS				1								3			
	2	CLASSIFY VARIOUS SEMICONDUCTOR DEVICES				1								3			
	3	PERFORM ANALYSIS OF VARIOUS AC- DC CONVERTERS	1	1		2								3			
	4	INTRODUCTION OF DIFFERENT TYPES OF DC-DC CONVERTERS	1	1		2								2			
	5	PERFORM ANALYSIS DC-AC CONVERTERS	1	1		3								2			
	6	PERFORM EXPERIMENTS ON VARIOUS DIAC AND TRIAC	1														
			1	1		1.8								2.6			

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ELECTRICAL MACHINES LAB (BTEEL306)	1	UNDERSTAND DIFFERENT TYPES, CONSTRUCTION AND PRINCIPLE OF SINGLE PHASE TRANSFORMER AND ITS APPLICATION	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
	2	CLASSIFY DIFFERENT TYPES OF CONNECTIONS OF 3 PHASE TRANSFORMER, AND UNDERSTAND THE PARALLEL OPERATIONS, PHASE CONVERSION CONCEPT. DESIGN OF EQUIVALENT CIRCUIT AND VARIOUS TEST OF	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	UNDERSTAND OPERATING PRINCIPLE, CONSTRUCTIONAL FEATURES TYPES, PERFORMANCE CHARACTERISTICS, ARMATURE REACTION, COMMUTATION OF DC GENERATOR AND THEIR APPLICATIONS	3	3	3	2	-	-	-	-	-	-	-	2	-	-	-
	4	DEVELOP TORQUE EQUATION AND CALCULATE CURRENT, POWER, LOSSES AND EFFICIENCY OF VARIOUS TYPES OF DC MOTORS AND UNDERSTAND DIFFERENT CHARACTERISTICS, VARIOUS METHODS OF SPEED CONTROL	3	3	3	2	-	-	-	-	-	-	-	2	-	-	-
Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
NETWORK THEORY LAB (BTEEL406)	1	REVIEW BASIC COMPONENTS OF ELECTRIC NETWORK	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
	2	UNDERSTAND NETWORK THEOREMS TO SIMPLIFY COMPLEX NETWORKS.	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	UNDERSTAND TRANSIENT ANALYSIS IN ELECTRICAL CIRCUITS	3	3	-	3	2	-	-	-	-	-	-	-	-	-	-
	4	EVALUATE THE PARAMETERS OF TWO PORT NETWORKS	2	2	-	2	-	-	-	-	-	-	-	-	-	-	-

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Course/Subject with course code		Course Outcomes (COs)	Program Outcomes (POs)												PSOs		
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
ELECTRICAL DRIVES LAB (BTEEL708)	1	ANALYZE THE DYNAMICS OF THE ELECTRICAL DRIVES SYSTEM.	3	3	2	2	-	-	-	-	2	-	-	3	-	-	-
	2	USE VARIOUS CONTROL TECHNIQUES FOR CONTROLLING THE SPEED OF AC AND DC MOTORS.	3	3	-	2	-	-	-	-	2	-	-	3	-	-	-
	3	ANALYZE THE AC AND DC DRIVES.	3	3	2	2	-	-	-	-	3	-	-	3	-	-	-
			3	3	2	2	-	-	-	-	2.3	-	-	3	-	-	-