BRANCH:	EEE /B.Tech II			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	II	SEMESTER:	III
SUBJECT:	Networks analysis and synthesis			SUBJECT CODE:	BEET-305

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEET 305.1	Apply network topology concepts to the formulation and resolution of electrical network issues.
BEET 305.2	Determine the attributes and traits of network functions and confirm the mathematical limitations for their practical implementation.
BEET 305.3	Synthesize passive two-port networks filters using standard Foster and Cauer forms.
BEET 305.4	Apply the concept of Laplace and Fourier transforms in electrical network problems.
BEET 305.5	To analyze the behaviour of the circuit in different domains.

BRANCH:	EEE /B.Tech II			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	II	SEMESTER:	III
SUBJECT:	Programming Practices			SUBJECT CODE:	BEEP 306

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEEP 306.1	Demonstrate proficiency in utilizing MATLAB for solving mathematical and engineering problems through programming exercises and projects.
BEEP 306.2	Apply a comprehensive understanding of MATLAB's syntax, data types, functions, and built-in libraries to independently explore and manipulate data and algorithms.
BEEP 306.3	Develop problem-solving skills by applying MATLAB such as signal processing and mathematical modeling.
BEEP 306.4	Utilize MATLAB as a tool for data analysis and simulation in various disciplines such as engineering, science and technology.
BEEP 306.5	Transfer skills acquired in MATLAB to learn and adapt to other programming languages and environments, fostering lifelong learning and versatility in software development.

BRANCH:	EEE /B.Tech III			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	III	SEMESTER:	V
SUBJECT:	Applied Instrumentation			SUBJECT CODE:	BEET 503(B)

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEET 503.1	Demonstrate understanding of basic sensor characteristics, including principles of operation, sensitivity, accuracy, and response time.
BEET 503.2	Classify various types of sensors and actuators based on their principles, functions, and applications across different industries.
BEET 503.3	Apply mathematical equations relevant to temperature sensors to analyze and solve problems related to temperature measurement and control.
BEET 503.4	Apply mathematical equations relevant to pressure sensors to analyze and solve problems related to pressure measurement and control.
BEET 503.5	Apply mathematical equations relevant to level sensors and display devices to analyze and solve problems related to level measurement and visualization.

BRANCH:	EEE /B.Tech III			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	III	SEMESTER:	V
SUBJECT:	Industrial Interaction			SUBJECT CODE:	BENP-506

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BENP-506.1	Demonstrate competency in the field of electrical engineering through problem identification, formulation and solution.
BENP-506.2	Develop the ability to work as an individual and in group with the capacity to be a leader or manager as well as an effective team member.
BENP-506.3	Apply theoretical knowledge gained in the classroom to real-world industrial scenarios, fostering a deeper understanding of practical applications.
BENP-506.4	Identify potential career paths and opportunities within the industry through networking and mentorship during interactions with professionals.

BENP-506.5	Generate a report based on the experience and projects carried out with the ability to apply knowledge of Mathematics, Science and Engineering Fundamentals.				
BRANCH:	EEE /B.Tech IV			**SESSION:**	**2022-23**
COURSE:	**B.TECH- EEE**	**YEAR:**	IV	**SEMESTER:**	VII
SUBJECT:	Switchgear and protection			**SUBJECT CODE:**	**BEET- 701**

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEET-701.1	Explain the various faults and protective schemes in the Power systems
BEET-701.2	Summarize the operation of various protection relays in the power systems
BEET-701.3	Infer the need and procedure of apparatus protection in the power protection system.
BEET-701.4	Identify and classify circuit breakers based on design, operating mechanisms, and testing procedures using both direct and indirect methods.
BEET-701.5	Identify and analyze types of faults on transformers and understand the principles and methods of protection for each type of fault.

BRANCH:	EEE /B.Tech IV			**SESSION:**	**2022-23**
COURSE:	**B.TECH- EEE**	**YEAR:**	IV	**SEMESTER:**	VII
SUBJECT:	Switchgear and protection lab			**SUBJECT CODE:**	**BEEP- 701**

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEEP-701.1	Analyze protection requirements for different types of electrical equipment and circuits.
BEEP-701.2	Demonstrate a comprehensive understanding of protection principles in electrical systems, including overcurrent, differential, and earth fault protection.
BEEP-701.3	Develop the ability to identify and troubleshoot common faults in switchgear systems, including short circuits, insulation failures, and mechanical malfunctions.
BEEP-701.4	Testing and commissioning various types of switchgear equipment, including circuit breakers, relays, and busbar systems, to ensure proper functioning and reliability.
BEEP-701.5	Understand the importance of compliance with relevant industry standards and regulations governing switchgear installation, operation, and maintenance.

BRANCH:	EEE /B.Tech			**SESSION:**	**2022-23**
COURSE:	**B.TECH- EEE**	**YEAR:**	II	**SEMESTER:**	IV
SUBJECT:	Signal & System			**SUBJECT CODE:**	**BECT-402**

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BECT 402.1	Understand the basics of continuous time and discrete time signals and systems.
BECT 402.2	Explain state space analysis of LTI system.
BECT 402.3	Comprehend the effects of sampling on a continuous time signal
BECT 402.4	Calculate Fourier series and Fourier transform of continuous and discrete time signals.
BECT 402.5	Analyze signal systems properties like stability and causality using Laplace and Z transforms

BRANCH:	EEE /B.Tech			**SESSION:**	**2022-23**
COURSE:	**B.TECH- EEE**	**YEAR:**	III	**SEMESTER:**	VI
SUBJECT:	Digital Signal Processing			**SUBJECT CODE:**	**BECT-603**

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BECT 603.1	Understand the concept of signals and systems along with frequency analysis
BECT 603.2	Explain the concept of multi rate signal processing.

BECT 603.3	Apply FFT Algorithm to compute DFT of discrete signals.
BECT 603.4	Illustrate the effect of finite register length in FIR digital filters.
BECT 603.5	Analyze the frequency characteristics of IIR and FIR digital filters for given requirements

BRANCH:	EEE /B.Tech		SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR: III	SEMESTER:	VI
SUBJECT:	Digital Signal Processing Lab		SUBJECT CODE:	BECP-603

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BECP 603.1	Understand the mathematical operation on discrete signals.
BECP 603.2	Sketch the magnitude and phase response of DFT,Inverse DFT and FFT of descrete time signals
BECP 603.3	Calculate linear and Circular convolution of discrete sequences
BECP 603.4	Illustrate the effect of finite register length in FIR digital filters.
BECP 603.5	Analyze the frequency characteristics of IIR and FIR digital filters for given requirements

BRANCH:	EEE /B.Tech IV		SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR: IV	SEMESTER:	VIII
SUBJECT:	Advance control Systems		SUBJECT CODE:	BEET- 801

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEET-801.1	Analyzing nonlinear system dynamics, visualizing phase portraits, and interpreting describing functions.
BEET-801.2	Applying Lyapunov stability theory to analyze system stability, designing optimal control strategies, and optimizing system performance.
BEET-801.3	Formulating discrete-time models, understanding difference equations, state-space representation, and z-transform techniques.
BEET-801.4	Evaluating transient and steady-state responses, assessing system stability, and analyzing sensitivity of linear control systems.
BEET-801.5	Designing state feedback controllers, placing poles for desired system behavior, implementing state observers, and designing output feedback controllers for improved system performance.

BRANCH:	EEE /B.Tech IV		SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR: IV	SEMESTER:	VIII
SUBJECT:	Advance control Systems LAB		SUBJECT CODE:	BEEP- 801

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEEP-801.1	Model and analyze a control system in the form of transfer function, in MATLAB, considering it's zeros, poles and gain.
BEEP-801.2	Analyze the time and frequency responses of SISO and MIMO linear time invariant systems via various plots, for assessing the margins and stability of open loop as well as closed loop control
BEEP-801.3	Demonstrate the Time Domain and frequency domain response analysis of power-sector based 'first and second order control systems' for assessing the system stability and control action.
BEEP-801.4	Design lead-lag compensator for the 'higher order (third order and above) unstable control systems' for providing the necessary compensation in order to enhance the system response and sta
BEEP-801.5	Design P, PI as well as PID controllers for continuous process control and tuning of 'temperature, level and pressure based' closed loop control systems.

BRANCH:	EEE /B.Tech III		SESSION:	2022-23

COURSE:	B.TECH- EEE	YEAR:	III	SEMESTER:	VI
SUBJECT:	Minor Project I			SUBJECT CODE:	BEEP-607

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEEP-607.1	Develop a structured thought process for preparing and delivering presentations effectively.
BEEP-607.2	Enhance language proficiency and communication skills to convey ideas clearly and effectively.
BEEP-607.3	Foster an understanding of diverse viewpoints, promoting collaboration and teamwork.
BEEP-607.4	Researching and staying informed about emerging technologies, regulations, and innovations to adapt and respond to industry changes effectively.
BEEP-607.5	Cultivate critical thinking skills and problem-solving abilities to address challenges in power systems engineering.

BRANCH:	EEE /B.Tech IV			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	IV	SEMESTER:	VIII
SUBJECT:	Electric Drives & its Applications			SUBJECT CODE:	BEET 802

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEET 802.1	Differentiate electric drives systems based on nature of loads, control objectives, performance and reliability.
BEET 802.2	Analyze load characteristics, torque-speed requirements, duty cycles, and environmental conditions to select suitable motors and drives.
BEET 802.3	Illustrate the concept of braking to distinguish types of machines in electric drives
BEET 802.4	Develop capability to choose a suitable electrical machine and Power Electronic Converter involving load estimation and load cycle consideration.
BEET 802.5	Design the frequency controlled converters used motor drives utilising phase controlled converters.

BRANCH:	EEE /B.Tech III			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	III	SEMESTER:	VI
SUBJECT:	POWER ELECTRONICS			SUBJECT CODE:	BEET 601

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEET 601.1	Apply basic semiconductor physics to properties of power devices, and combine circuit mathematics and characteristics of linear and non linear devices. Apply the laws of electrical heating in various industrial
BEET 601.2	Compare performance of various power semiconductor devices, passive components and switching circuits.
BEET 601.3	Analyze power converter circuits and learn to select suitable power electronic devices by assessing the requirements of application fields
BEET 601.4	Formulate typical alternative solutions,using suitable power converters to control Electrical Motors and other industry apparatus
BEET 601.5	Design rectifiers, inverters, choppers, and cycloconverters based on given specifications and requirements.

BRANCH:	EEE /B.Tech II			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	II	SEMESTER:	IV
SUBJECT:	CONTROL SYSTEM			SUBJECT CODE:	BEET 405

COURSE OUTCOMES (CO)	
CO #	**CO STATEMENT**
BEET 405.1	Categorize different types of system and identify a set of algebraic equations to represent and model a complicated system into a more simplified form
BEET 405.2	Apply standard test signals to a system to determine their characteristics.
BEET 405.3	Examine the system behaviour using various stability analysis techniques.
BEET 405.4	Analyze the stability of various linear time invariant systems using frequency response methods.
BEET 405.5	Identify the needs of different types of controllers and compensator to ascertain the required dynamic response from the system.

BRANCH:	EEE /B.Tech IV		SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR: IV	SEMESTER:	VIII
SUBJECT:	Electric Drives & its Applications Lab		SUBJECT CODE:	BEEP 802

COURSE OUTCOMES (CO)	
CO #	**CO STATEMENT**
BEEP 802.1	Analyze the four quadrant operation of motor drives.
BEEP 802.2	Examine the operation of three phase fully and half controlled converters for different types of loads experimentally.
BEEP 802.3	Develop testing and experimental procedures applying basic knowledge in electronics, electrical circuit analysis, electrical machines and microprocessors,
BEEP 802.4	Illustrate operation and analysis of different converters with reference to control strategy.
BEEP 802.5	Evaluate the performance characteristics of electrical machine drives.

BRANCH:	EEE /B.Tech III		SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR: III	SEMESTER:	VI
SUBJECT:	POWER ELECTRONICS LAB		SUBJECT CODE:	BEEP 601

COURSE OUTCOMES (CO)	
CO #	**CO STATEMENT**
BEEP 601.1	Analyze the power characteristics of various semiconductor devices.
BEEP 601.2	Evaluate the performance of AC-AC converter with various loads and operations.
BEEP 601.3	Compare and contrast various power semiconductor devices according to their applications.
BEEP 601.4	Analyze phase controlled converter circuit with different load conditions.
BEEP 601.5	Construct power semiconductor circuits for industrial applications.

BRANCH:	EEE /B.Tech		SESSION:	2022-23
COURSE:	B.TECH	YEAR: 2	EEE	SEMESTER:	4
SUBJECT:	Electrical Machine- 1		SUBJECT CODE:	BEET-402

COURSE OUTCOMES (CO)	
CO #	**CO STATEMENT**
BEET402.1	Analyse theoretically, the performance characteristics for different electrical machines .
BEET402.2	Examine the testing of different electrical machines so as to identify their applicability in different practical situations.
BEET402.3	Illustrate the constructional details and principle of operation of DC & AC machines.

BEET402.4	Apply the knowledge about starting and speed control, testing and applications of dc motors.
BEET402.5	Illustrate the construction, operation, and characteristics of commonly used dc machines.

BRANCH:	EEE /B.Tech			SESSION:	2022-23
COURSE:	B.TECH	YEAR: 2	EEE	SEMESTER:	4
SUBJECT:	Electrical Machine- II			SUBJECT CODE:	BEET-402

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
BEEP402.1	Developing the skill of operating different electrical machines and its control techniques
BEEP402.2	Performing different tests on various DC & AC machines.
BEEP402.3	Acquiring understanding of DC & AC machine parameters.
BEEP402.4	Determine the parameters of equivalent circuit of single phase transformer and three phase transformer. performance
BEEP402.5	Providing a foundational understanding of electrical numbers and practical expertise for DC circuit analysis

BRANCH:	EEE /B.Tech III			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	III	SEMESTER:	VI
SUBJECT:	Energy Management & SCADA			SUBJECT CODE:	BEET-605 (C)

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
(C).1	Apply the principles of PLC, DCS, and SCADA to industrial automation.
(C).2	Identify the hardware and software requirements of SCADA and PLC.
(C).3	Acquiring understanding of DC & AC machine parameters.
(C).4	Simulate the safety-instrumented systems as per safety regulations.
(C).5	Demonstrate the SCADA principle in various applications.

BRANCH:	EEE /B.Tech VI			SESSION:	2022-23
COURSE:	B.TECH- EEE	YEAR:	IV	SEMESTER:	VIII
SUBJECT:	Bio-Medical Instrumentation			SUBJECT CODE:	BEET 803 (B)

COURSE OUTCOMES (CO)

CO #	CO STATEMENT
703(B).1	Identify the biological system's physiology.
703(B).2	Measure physiological and medical data.
703(B).3	Express their knowledge on the use of electronics in the field of therapy and diagnosis.
703(B).4	Compare the applications and setup of sensors in the medical field.
703(B).5	Evaluate ECG and EEG design parameters.

BRANCH:	EEE			SESSION:	2022-23
COURSE:	B.TECH	YEAR:	II	SEMESTER:	IV
SUBJECT:	Digital Electronics			SUBJECT CODE:	BECT-401

COURSE OUTCOMES (CO)

CO #	CO STATEMENT

BECT401.1	Comprehend and analyze digital logic circuit ,binary codes,number system and different types of minimization methods.
BECT401.2	Analyze the characteristics of logic families and semiconductor memories.Compare their performance in terms of performance metric
BECT401.3	Analyze digital systems for their performance, timing characteristics, and hazards.
BECT401.4	Design & implement combinational logic circuits for specific functions, such as adders, subtractors, multiplexers, and decoders.
BECT401.5	Design & implement sequential logic circuits, including flip-flops, counters, registers, and state machines.

SUBJECT:	Microprocessor & Embedded systems	SUBJECT CODE:	BECT 602
CO #			
BECT 602.1	Apply microprocessor techniques to solve problems.		
BECT 602.2	Analyze 8086 microprocessor for a given problem.		
BECT 602.3	Examine 8085 and 8086 microprocessor using assembly language programs.		
BECT 602.4	Implement assembly language program in 8086 microprocessor.		
BECT 602.5	Analyze interfacing of 8086 microprocessor		