DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING					
List of course outcomes 2022 scheme (Co's)					
SL NO	SEM	SCHEME	COURCE CODE	COURCE NAME	COURCE OUTCOMES
1	1ST	2022	BMATE101	Mathematics	CO1: apply the knowledge of calculus to solve problems related to polar curves and learn the notion of partial differentiation to compute rate of change of multivariate functions
					CO2: analyze the solution of linear and nonlinear ordinary differential equations
					CO3: apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing area and volume
					CO4: make use of matrix theory for solving the system of linear equations and compute eigenvalues and eigenvectors
					CO5: familiarize with modern mathematical tools namely MATHEMATICA/ MATLAB/ PYTHON/SCILAB
2			BPHYE102	Physics	CO1: Describe the fundamental principles of the Quantum Mechanics and the essentials of Photonics
					CO2: Elucidate the concepts of conductors, dielectrics and superconductivity
					CO3: Discuss the fundamentals of vector calculus and their applications in Maxwell's Equations and EM Waves.
					CO4: Summarize the properties of semiconductors and the working principles of semiconductor devices.
					CO5: Practice working in groups to conduct experiments in physics and Perform precise and honest measurements.
3			BBEE103	Basic Electronics	CO1: Develop the basic knowledge on construction, operation and characteristics of semiconductor devices.(Level: C3)
					CO2: Apply the acquired knowledge to construct small scale circuits consisting of semiconductor devices (Level: C3)
					CO3: Develop competence knowledge to constructbasic digital circuitby make use of basic gate and its function.(Level: C3)
					CO4: Construct the conceptual blocks for basic communication system. (Level: C3)
					CO5: Apply the knowledge of various transducers principle in sensor system. (Level: C3)
4			BESCK104B	Introduction to Electrical Engineering	CO1: Understand the concepts of various energy sources and Electric circuits.
					CO2: Apply the basic Electrical laws to solve circuits.
					CO3: Discuss the construction and operation of various Electrical Machines.
					CO4: Identify suitable Electrical machine for practical implementation.
					CO5: Explain the concepts of electric power transmission and distribution, electricity billing, circuit protective devices and personal safety measures.
5			BETCK105H	Introduction to Internet of Things	CO1: Describe the evolution of IoT, IoT networking components, and addressing strategies in IoT.
					CO2: Classify various sensing devices and actuator types.
					CO3: Demonstrate the processing in IoT.
					CO4: Explain Associated IOT Technologoes
					CO5: Illustrate architecture of IOT Applications
6			BENGK106	Communicative English	CO1: Understand and apply the Fundamentals of Communication Skills in their communication skills.
					CO2: Identify the nuances of phonetics, intonation and enhance pronunciation skills.
					CO3: To impart basic English grammar and essentials of language skills as per present requirement.
					CO4: Understand and use all types of English vocabulary and language proficiency.
					CO5: Adopt the Techniques of Information Transfer through presentation.
7			BICOK107	Indian Constitution	CO1: Analyse the basic structure of Indian Constitution.
					CO2: Remember their Fundamental Rights, DPSP's and Fundamental Duties (FD's) of our constitution.
					CO3: know about our Union Government, political structure & codes, procedures.
					CO4: Understand our State Executive & Elections system of India.
					CO5: Remember the Amendments and Emergency Provisions, other important provisions given by the constitution.
8			BIDTK158	Innovation and Design Thinking	CO1: Appreciate various design process procedure
					CO2: Generate and develop design ideas through different technique
					CO3: Identify the significance of reverse Engineering to Understand products
					CO4: Draw technical drawing for design ideas
9			BMATE201	Mathematics-II	CO1:Understand the applications of vector calculus refer to solenoidal, irrotational vectors, lineintegral and surface integral.
					CO2: Demonstrate the idea of Linear dependence and independence of sets in the vector space, and linear transformation
					CO3: To understand the concept of Laplace transform and to solve initial value problems.
					CO4: Apply the knowledge of numerical methods in solving physical and engineering phenomena

					CO5: Get familiarize with modern mathematical tools namely MATHEMATICA/MATLAB/PYTHON/ SCILAB
10			BCHEE202	Chemistry	CO1: Identify the terms andapplications processes involved in scientific and engineering
					CO2: Explainthephenomenaofchemistrytodescribethemethodsofengineering processes
					CO3: Solvetheproblemsinchemistrythatarepertinentinengineeringapplications
					CO4:Applythebasicconceptsofchemistrytoexplainthechemicalpropertiesandprocesses
					CO5: Analyzepropertiesandmulti disciplinarysituations processes associated withchemical substances in
11			BCEDK203	Computer-Aided Engineering Drawing	CO1: Drawand communicate the objects with definite shape and dimensions
					CO2: Recognize andDraw the shape and size of objects through different views
					CO3: Develop the lateral surfaces of the object
					CO4: Create a Drawing views using CAD software.
					CO5: Identify the interdisciplinary engineering components or systems through its graphical representation.
12			BCEDK203	Computer-Aided Engineering Drawing	CO 1. Drawand communicate the objects with definite shape and dimensions
					CO 2. Recognize andDraw the shape and size of objects through different views
					CO 3. Develop the lateral surfaces of the object
					CO 4. Create a Drawing views using CAD software.
					CO 5. Identify the interdisciplinary engineering components or systems through its graphical representation.
13	2ND	2022	BESCK204E	Introduction to C Programming	CO1. Elucidate the basic architecture and functionalities of a computer and also recognize the hardware parts.
					CO 2. Apply programming constructs of C language to solve the real world problem
					CO 3.Explore user-defined data structures like arrays in implementing solutions to problems like searching and sorting
					CO4.Explore user-defined data structures like structures, unions and pointers in implementing solutions
					CO5.Design and Develop Solutions to problems using modular programming constructs using functions
14			BPWKS206	Professional Writing Skills in English	CO1 To understand and identify the Common Errors in Writing and Speaking.
					CO2 To Achieve better Technical writing and Presentation skills.
					CO3 To read Technical proposals properly and make them to Write good technical reports.
					CO4 Acquire Employment and Workplace communication skills
					CO5 To learn about Techniques of Information Transfer through presentation in different level.
15			BPLCK205B	Introduction to Python Programming	CO1 Demonstrate proficiency in handling loops and creation of functions.
					CO2 Identify the methods to create and manipulate lists, tuples and dictionaries.
					CO3 Develop programs for string processing and file organization
					CO4 Interpret the concepts of Object-Oriented Programming as used in Python.
16			BKSKK207	Samskrutika Kannada	CO1 ಕನಡ , ತ ಮ I ಕನಡದ ಸೃಯ I ಅ ತI .
					CO2 ಕನಡ ತದ ಪI ನ ಗ ದ ಆ ಕ ವ ಮ I ಆ ಕ Iವಗಳ I ಂoIಕ I ಕ II ನ ಓ I ಮ I II ನII I ತI .
					CO3 I ಗಳ I ತ ಮ I ಸೃಯ ಬII ಅ I ಆಸI Iಯ I IIIತI .
					CO4 ಂ I ಕ ವI I I ಗಳ ಪಚಯ I ಅವ ಗಳ ದ ಷಯಗಳ I ।ಂ ನ ಇ I ತರ ವI I I ಗಳ ಬII IಳI I ಕ IIIತI .
					CO5 ಂಸೃ ಕ, ಜನಪದ I ಪI ಸ ಕಥನಗಳ ಪಚಯ I .
17			BSFHK258	Scientific Foundations of Health	CO1 To understand and analyse about Health and wellness (and its Beliefs) & It's balance for positive mindset.
					CO2 Develop the healthy lifestyles for good health for their better future.
					CO3 Build a Healthy and caring relationships to meet the requirements of good/social/positive life.
					CO4 To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future.
					CO5 Prevent and fight against harmful diseases for good health through positive mindset.
18	3RD	2022	BMATEC301	AV Mathematics-III for EC Engineering	CO1: Demonstrate the Fourier series to study the behavior of periodic functions and their applications in system communications, digital signal processing, and field theory.
					CO2: To use Fourier transforms to analyze problems involving continuous-time signals
					CO3: To apply Z-Transform techniques to solve difference equations
					CO4: Understand that physical systems can be described by differential equations and solve such equations
					CO5: Make use of correlation and regression analysis to fit a suitable mathematical model for statistical data
19			BEC302	Digital System Design using	CO1: Simplify Boolean functions using K-map and Quine-McCluskey minimization technique.
					CO2: Analyze and design for combinational logic circuits
					CO3: Analyze the concepts of Flip Flops(SR, D,T and JK) and to design the synchronous sequential circuits using Flip Flops.

				Verilog	CO4: Model Combinational circuits (adders, subtractors, multiplexers) and sequential circuits using Verilog descriptions.
20			BEC303	Electronic Principles and Circuits	CO1: Understand the characteristics of BJTs and FETs for switching and amplifier circuits.
					CO2: Design and analyze amplifiers and oscillators with different circuit configurations and biasing conditions.
					CO3: Understand the feedback topologies and approximations in the design of amplifiers and oscillators.
					CO4: Design of circuits using linear ICs for wide range applications such as ADC, DAC, filters and timers.
					CO5: Understand the power electronic device components and its functions for basic power electronic circuits.
21			BEC304	Network Analysis	CO1: Determine currents and voltages using source transformation/ source shifting/ mesh/ nodal analysis and reduce given network using star- delta transformation.
					CO2: Solve problems by applying Network Theorems and electrical laws to reduce circuit complexities and to arrive at feasible solutions.
					CO3: Analyse the circuit parameters during switching transients and apply Laplace transform to solve the given network
					CO4:Evaluate the frequency response for resonant circuits and the network parameters for two port networks
22			BECL305	Analog and Digital Systems Design Lab	CO1: Design and analyze the BJT/FET amplifier and oscillator circuits.
					CO2: Design and test Opamp circuits to realize the mathematical computations, DAC and precision rectifiers.
					CO3: Design and test the combinational logic circuits for the given specifications.
					CO4: Test the sequential logic circuits for the given functionality.
					CO5: Demonstrate the basic circuit experiments using 555 timer.
23			BEC306C	Computer Organization and Architecture	CO1: Explain the basic organization of a computer system.
					CO2: Describe the addressing modes, instruction formats and program control statement.
					CO3: Explain different ways of accessing an input/ output device including interrupts.
					CO4: Illustrate the organization of different types of semiconductor and other secondary storage memories.
					CO5: Illustrate simple processor organization based on hard wired control and microprogrammed control.
24			BSCK307 S	Social Connect and Responsibility	CO1: Communicate and connect to the surrounding.
					CO2: Create a responsible connection with the society
					CO3: Involve in the community in general in which they work.
					CO4: Notice the needs and problems of the community and involve them in problem –solving.
					CO5: Develop among themselves a sense of social & civic responsibility & utilize their knowledge in finding practical solutions to individual and community problems.
					CO6: Develop competence required for group-living and sharing of responsibilities & gain skills in mobilizing community participation to acquire leadership qualities and democratic attitudes.
25			BEC358B	MATLAB Programming	Co1: Understand the syntax of MATLAB for arithmetic computations, arrays, matrices.
					Co2: Understand the built in function, saving and loading data, and create plots
					Co3: Create program using symbolic computations, Importing and exporting data and files
					Co4: Create program using character strings, Command line functions and Built-in functions.
26			BNSK359	National Service Scheme (NSS)	CO1: Understand the importance of his / her responsibilities towards society.
					CO2: Analyse the environmental and societal problems/issues and will be able to design solutions for the same.
					CO3: Evaluate the existing system and to propose practical solutions for the same for sustainable development.
					CO4: Implement government or self-driven projects effectively in the field.
					CO5: Develop capacity to meet emergencies and natural disasters & practice national integration and social harmony in general.
27	4TH	2022	BEC401	Electromagnetics Theory	Co1: Evaluate problems on electrostatic force, electric field due to point, linear, volume charges by applying conventional methods and charge in a volume.
					Co2: Apply Gauss law to evaluate Electric fields due to different charge distributions and Volume Charge distribution by using Divergence Theorem.
					Co3: Determine potential and energy with respect to point charge and capacitance using Laplace equation and Apply Biot-Savart's and Ampere's laws for evaluating Magnetic field for different current configurations
					Co4: Calculate magnetic force, potential energy and Magnetization with respect to magnetic materials and voltage induced in electric circuits
					Co5: Apply Maxwell's equations for time varying fields, EM waves in free space and conductors and Evaluate power associated with EM waves using Poynting theorem
28			BEC402	Principles of Communication	Co1: Understand the principles of analog communication systems and noise modelling.
					Co2: Identify the schemes for analog modulation and demodulation and compare their performance.
					Co3: Design of PCM systems through the processes sampling, quantization and encoding.

28			BEC402	Communication Systems	Co4: Describe the ideal condition, practical considerations of the signal representation for baseband transmission of digital signals.
					Co5: Identify and associate the random variables and random process in Communication system design.
29			BEC403	Control Systems	Co1: Deduce transfer function of a given physical system, from differential equation representation or Block Diagram representation and SFG representation.
					Co2: Calculate time response specifications and analyse the stability of the system.
					Co3: Draw and analyse the effect of gain on system behaviour using root loci.
					Co4: Perform frequency response Analysis and find the stability of the system.
					Co5: Represent State model of the system and find the time response of the system.
30			BECL404	Communication Lab	Co1: Illustrate the AM generation and detection using suitable electronic circuits.
					Co2: Design of FM circuits for modulation, demodulation and noise suppression.
					Co3: Design and test the sampling, Multiplexing and pulse modulation techniques using electronic hardware.
					Co4: Design and Demonstrate the electronic circuits used for RF transmitters and receivers.
31			BEC405A	Microcontrollers	Co1:Describe the difference between Microprocessor and Microcontroller, Types of Processor Architectures and Architecture of 8051Microcontroller.
					Co2: Discuss the types of 8051 Microcontroller Addressing modes & Instructions with Assembly Language Programs.
					Co3: Explain the programming operation of Timers/Counters and Serial port of 8051 Microcontroller.
					Co4: Illustrate the Interrupt Structure of 8051 Microcontroller & its programming.
					Co5:Develop C programs to interface I/O devices with 8051 Microcontroller.
32			BEC456A	Microcontroller Lab	Co1: Write a Assembly Language/Cprogramsin8051forsolvingsimpleproblemsthatmanipulateinputdatausingdifferentinstructions.
					Co2: Develop Testing and experimental procedures on 8051 Microcontroller, Analyze their operation under different cases.
					Co3: Developprogramsfor8051Microcontrollertoimplementreal worldproblems.
					Co4: DevelopMicrocontrollerapplicationsusingexternalhardwareinterface.
33			BBOK407	Biology For Engineers	Co1: Elucidate the basic biological concepts via relevant industrial applications and case studies.
					Co2: Elucidate the basic biological concepts via relevant industrial applications and case studies.
					Co3: Corroborate the concepts of biomimetics for specific requirements.
					Co4: Think critically towards exploring innovative biobased solutions for socially relevant problems.
34			BUHK408	Universal human values course	Co1: They would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
					Co2: They would have better critical ability.
					Co3: They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
					Co4: It is hoped that they would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.
35			BPEK459	Physical Education (PE) (Sports and Athletics)	Co1:understand the ehics and moral values in sports and athletics
					Co2: Perform in the selected sports or arthetics of students's choice,
					Co3: Understand the roles and responsibilities of organisation and administration of sports and games.