PHYSICS (SEMICONDUCTOR PHYSICS) (1st/2nd Semester)
Course Code: BPHYS1-101

Course Outcomes:

After undertaking this course:

CO1: student will able to describe the quantum mechanics and its application

CO2: student will able to write down the band theory of solids

CO3: student will able to describe n and p type semiconductor, principle and working of laser and its
   application

CO4: student will able to understand the importance and application of optical fibre

MATHEMATICS-I (CALCULUS, LINEAR ALGEBRA) (1st/2nd Semester)
Course Code: BMATH1-101

Course Outcomes:

This will help the students:

CO1: To apply differential and integral calculus to notions of curvature and to improper integrals. Apart
from some other applications they will have a basic understanding of Beta and Gamma functions.

CO2: The fallouts of Rolle's Theorem that is fundamental to application of analysis to Engineering
problems.

CO3: The tool of power series and Fourier series for learning advanced Engineering Mathematics.

CO4: To deal with functions of several variables that are essential in most branches of engineering.

CO5: The essential tool of matrices and linear algebra in a comprehensive manner.

ENGINEERING GRAPHICS & DESIGN (1st/2nd Semester)
Course Code: BMECE0-101

Course Outcomes:

After undertaking this course:

CO1: Students will get a basic understanding of engineering drawing and its principles

CO2: Students will get exposure to drawing, drafting techniques and interpretation of drawing Scales

CO3: Students will learn about the projection of Point, line, Planes and regular solids

CO4: Students will learn about the development of surfaces

CO5: Students will learn about Isometric and Orthographic Projections of Simple and compound Solids

BASIC ELECTRICAL ENGINEERING (1st/2nd Semester)
Course Code: BELEE0-101

Course Outcomes:

This will help the students:

CO1: To understand and analyze basic DC and AC circuits.

CO2: To study the use and working principle of single-phase transformers.

CO3: To study the application and working principles of three phase and single-phase induction motors.

CO4: To introduce to the components of low voltage electrical installations.

PHYSICS (SEMICONDUCTOR PHYSICS) LAB. (1st/2nd Semester)
Course Code: BPHYS1-102

Course Outcomes:

This will help the students:

CO1: To able to analyse handling and use of different type of diode.

CO2: Analyse the use of lasers.

CO3: To understand the working of spectrometer

ENGINEERING GRAPHICS & DESIGN LAB. (1st/2nd Semester)
Course Code: BMECE0-102

Course Outcomes:

After undertaking this course:

CO1: Students will get exposure to computer-aided geometric design

CO2: Students will get exposure to creating working drawings

CO3: Students will get exposure to engineering drawings.

BASIC ELECTRICAL ENGINEERING LAB. (1st/2nd Semester)
Course Code: BELEE0-102

Course Outcomes:

This will help the students to:

CO1: Get an exposure to common electrical components and their ratings.

CO2: Make electrical connections by wires of appropriate ratings.

CO3: Understand the usage of common electrical measuring instruments.

CO4: Understand the basic characteristics of transformers and electrical induction motors.

DRUG ABUSE: PROBLEM, MANAGEMENT AND PREVENTION (1st/2nd Semester)

Course Code: BHUMA0-104

Course Outcomes:

After undertaking this course:

CO1: Students will learn to understand prevention of Drug Abuse

CO2: Students will learn to understand treatment and Control of Drug Abuse

INTRODUCTION TO COMPUTER SCIENCE & ENGINEERING (1st/2nd Semester)

Course Code: BCOBE0-101

Course Outcomes:

After undertaking this course:

CO1: Students will learn about Scope and Applications of Computer Science & Engineering.

CO2: Students will learn about various types of Hardware and Software components.

CO3: Students will learn about High level and low-level languages

CO4: Students will learn about Operating System

CHEMISTRY-I (1st/2nd Semester)

Course Code: BCHEM0-101

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Analyse microscopic chemistry in terms of atomic and molecular orbitals and intermolecular forces.

CO2: Rationalize bulk properties and processes using thermodynamic considerations.

CO3: Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques

CO4: Rationalize periodic properties such as ionization potential, electronegativity, oxidation states and electronegativity.

CO5: List major chemical reactions that are used in the synthesis of molecules.

MATHEMATICS-II (PROBABILITY AND STATISTICS) (1st/2nd Semester)
Course Code: BMATH1-201

Course Outcomes:

The students will able to understand:

CO1: The mathematical tools needed in evaluating multiple integrals and their usage.

CO2: The effective mathematical tools for the solutions of differential equations that model physical processes.

CO3: The tools of differentiation and integration of functions of a complex variable that are used in various techniques dealing engineering problems.

ENGLISH (1st/2nd Semester)
Course Code: BHUMA0-101

Course Outcomes:

After undertaking this:

CO1: The student will acquire basic proficiency in English including reading and listening comprehension, writing and speaking skills.

PROGRAMMING FOR PROBLEM SOLVING (1st/2nd Semester)
Course Code: BCSCE0-101

Course Outcomes:

The students after undertaking this course will be able:

CO1: To formulate simple algorithms for arithmetic and logical problems.

CO2: To translate the algorithms to programs (in C language).

CO3: To test and execute the programs and correct syntax and logical errors.

CO4: To implement conditional branching, iteration and recursion.

CO5: To decompose a problem into functions and synthesize a complete program using divide and conquer approach.

CO6: To use arrays, pointers and structures to formulate algorithms and programs.

CO7: To apply programming to solve matrix addition and multiplication problems and searching and sorting problems.

CO8: To apply programming to solve simple numerical method problems, namely rot finding of function, differentiation of function and simple integration.

CHEMISTRY-I LAB. (1st/2nd Semester)
Course Code: BCHEM0-101

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Estimate rate constants of reactions from concentration of reactants/products as a function of time

CO2: Measure molecular/system properties such as surface tension, viscosity, conductance of solutions, redox potentials, chloride content of water, etc.

CO3: Synthesize a small drug molecule and analyze a salt sample

ENGLISH LAB. (1st/2nd Semester)
Course Code: BHUMA0-102

Course Outcomes:

The students after undertaking this course will be able:

CO1: To cover comprehensive exposition to lexical derivatives and word-formation

CO2: To understand the mechanics of writing: semantics

CO3: To identify errors and non-native flaws in English sentence framework

CO4: To learn nature and style of writing with varied writing forms

PROGRAMMING FOR PROBLEM SOLVING LAB. (1st/2nd Semester)
Course Code: BCSCE0-102

Course Outcomes:

The students after undertaking this course will be able:

CO1: To formulate the algorithms for simple problems.

CO2: To translate given algorithms to a working and correct program.

CO3: To be able to correct syntax errors as reported by the compilers.

CO4: To be able to identify and correct logical errors encountered at run time.

CO5: To be able to write iterative as well as recursive programs.

CO6: To be able to represent data in arrays, strings and structures and manipulate them through a program.

CO7: To be able to declare pointers of different types and use them in defining self-referential structures.

CO8: To be able to create, read and write to and from simple text files.

MANUFACTURING PRACTICES (THEORY & LAB.) (1st/2nd Semester)
Course Code: BMFPR0-101

Course Outcomes:

The students:

CO1: Upon completion of this course, the students will gain knowledge of the different manufacturing processes which are commonly employed in the industry, to fabricate components using different materials.

CO2: Upon completion of this laboratory course, students will be able to fabricate components with their own hands.

CO3: Upon completion of this course, they will also get practical knowledge of the dimensional accuracies and dimensional tolerances possible with different manufacturing processes.

CO4: Will different components, they will be able to produce small devices of their interest.

HUMAN VALUES AND PROFESSIONAL ETHICS (1st/2nd Semester)
Course Code: BHUMA0-103

Course Outcomes:

After undertaking this course:

CO1: Students will learn to understand meaning of values, Values as social fact and

Universal values CO2: Students will learn to understand values, morality, ethics and their relation with Religion

CO3: Students will learn to understand meaning and types of Professional Ethics,

Goals of professional work and their problems

CO4: Students will learn to understand the technology for and against mankind and environment

Calculus and Ordinary Differential Equation (3rd Semester)
Course Code- BMATH1- 301

Course Outcomes:

The students after undertaking this course will be able:

CO1: To apply differential and integral calculus to notions of curvature and to improper integrals. Apart from various applications, they will have a basic understanding of Beta and Gamma functions.

CO2: To apply the essential tools of matrices and linear algebra including linear transformations, eigenvalues, diagonalization and orthogonalization.

COMPUTER PERIPHERALS & INTERFACES (3rd Semester)

Course Code- BCSES1-301

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Familiarize with the basic knowledge of various I/O buses, IDE interfaces &standards.

CO2: Solve future peripheral problems with modern tool usage.

CO3: Recognize various aspects of cost performance methods and apply these to manage projects.

CO4: Assemble and calibrate various H/W system as per the application requirement.

CO5: Analyse the hardware problem and perform troubleshooting for the same.

DATA STRUCTURE & ALGORITHMS (3rd Semester)

Course Code- BCSES1-302

Course Outcomes:

After undertaking this course:

CO1: For a given algorithm student will able to analyse the algorithms to determine the time and computation complexity and justify the correctness.

CO2: For a given Search problem (Linear Search and Binary Search) student will able to implement it.

CO3: For a given problem of Stacks, Queues and linked list student will able to implement it and analyse the same to determine the time and computation complexity.

CO4: Student will able to write an algorithm Selection Sort, Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Heap Sort and compare their performance in term of Space and Time complexity.

CO5: Student will able to implement Graph search and traversal algorithms and determine the time and computation complexity.

DIGITAL ELECTRONICS (3rd Semester)

Course Code- BCSES1-303

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Understand working of logic families and logic gates.

CO2: Design and implement Combinational and Sequential logic circuits.

CO3: Understand the process of Analog to Digital conversion and Digital to Analog conversion.

CO4: Be able to use PLDs to implement the given logical problem.

DATA STRUCTURE & ALGORITHMS LABORATORY (3rd Semester)
Course Code- BCSES1-304

Course Outcomes:

The students after undertaking this course will be able:

CO1: To introduce the basic concepts of Data structure, basic data types, searching and sorting based on array data types.

CO2: To introduce the structured data types like Stacks and Queue and its basic operation 's implementation.

CO3: To introduces dynamic implementation of linked list.

CO4: To introduce the concepts of Tree and graph and implementation of traversal algorithms.

DIGITAL ELECTRONICS LABORATORY (3rd Semester)
Course Code- BCSES1-305

Course Outcomes:

The students after undertaking this course will be able:

CO1: To Familiarization with Digital Trainer Kit and associated equipment.

CO2: To Study and design of TTL gates.

CO3: To learn the formal procedures for the analysis and design of combinational circuits.

CO4: To learn the formal procedures for the analysis and design of sequential circuits.

IT WORKSHOP (SciLab / MATLAB) LABORATORY (3rd Semester)
Course Code- BCSES1-306

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Understanding the MATLAB environment

CO2: Being able to do simple calculations using MATLAB

CO3: Being able to carry out simple numerical computations and analyses using MATLAB

TRAINING-1 (3rd Semester)
Course Code- BCSES1-307

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Acquire in depth knowledge of modern engineering and IT tool usage.

CO2: Develop applications according to user's needs.

CO3: Learn about an environment required for project development and effective communication skills.

CO4: Get knowledge to prepare reports and presentations.

CO5: Learn to work in a team as a member or a leader.

DEVELOPMENT OF SOCIETIES (3rd Semester)
Course Code- BHSMC0-007

Course Outcomes:

After undertaking this course, students:

CO1: Being able to provide a natural link between engineering and humanities with an emphasis that Development is not just materialistic, larger view of all-round human development should also be considered.

CO2: Being able to imbibe importance of sustainable development, interdependence and co-existence in nature should be realised through this course.

CO3: It is to gain an understanding of alternative models of development.

DISCRETE MATHEMATICS (4th Semester)
Course Code- BMATH1-401

Course Outcomes:

After undertaking this course, Students will learn:

CO1: For a given a problem, derive the solution using deductive logic and prove the solution based on logical inference.

CO2: For a given a mathematical problem, classify its algebraic structure.

CO3: Evaluate Boolean functions and simplify expressions using the properties of Boolean Algebra.

CO4: Develop the given problem as graph networks and solve with techniques of graph theory.

COMPUTER ORGANIZATION & ARCHITECTURE (4th Semester)
Course Code- BCSES1-401

Course Outcomes:

After undertaking this course, students can:

CO1: Draw the functional block diagram of a single bus architecture of a computer and describe the function of the instruction execution cycle, RTL interpretation of instructions, addressing modes, instruction set.

CO2: Write assembly language program for specified microprocessor for computing16 bit multiplication, division and I/O device interface (ADC, Control circuit, serialport communication).

CO3: Write a flowchart for Concurrent access to memory and cache coherency in Parallel Processors and describe the process.

CO4: Given a CPU organization and instruction, design a memory module and analyze its operation by interfacing with the CPU.

CO5: Given a CPU organization, assess its performance, and apply design techniques to enhance performance using pipelining, parallelism and RISC methodology

OPERATING SYSTEMS (4th Semester)
Course Code- BCSES1-402

Course Outcomes:

After undertaking this course, Students will be able to:

CO1: Create processes and threads.

CO2: Develop algorithms for process scheduling for a given specification of CPU utilization, Throughput, Turnaround Time, Waiting Time, Response Time.

CO3: For a given specification of memory organization develop the techniques for optimally allocating memory to processes by increasing memory utilization and for improving the access time.

CO4: Design and implement file management system and for a given I/O devices and OS (specify) develop the I/O management functions in OS as part of a uniform device abstraction by performing operations for synchronization between CPU and I/O controllers.

OBJECT ORIENTED PROGRAMMING (4th Semester)
Course Code- BCSES1-403

Course Outcomes:

The students after undertaking this course will be able:

CO1: To introduce the basic concepts of object-oriented programming language and its representation.

CO2: To allocate dynamic memory, access private members of class and the behaviour of inheritance and its implementation.

CO3: To introduce polymorphism, interface design and overloading of operator.

CO4: The handle backup system using file, general purpose template and handling of raised exception during programming.

OPERATING SYSTEMS LABORATORY (4th Semester)
Course Code- -BCSES1-404

Course Outcomes:

The students after undertaking this course can:

CO1: Perform installation of various operating systems.

CO2: Understand virtualization and installation of Operating System in virtual machine.

CO3: Implement commands for files and directories in LINUX O.S.

CO4: Apply process management through commands in LINUX.

CO5: Acquire knowledge of shell scripts and their execution, shell variables, statements and creation of shell programs for automation of tasks.

OBJECT ORIENTED PROGRAMMING USING C++ LABORATORY (4th Semester)
Course Code- BCSES1-405

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Implement OOPS concepts like classes & objects, inheritance & polymorphism.

CO2: Understand the concepts of pointers, standard I/O function.

CO3: Implement the concepts of exception handling.

CO4: Acquire knowledge of various file operations.

ORGANIZATIONAL BEHAVIOR (4th Semester)
Course Code- BHSMC0-016

Course Outcomes:

The students after undertaking this course will be able to:

CO1: Understand basic concepts of organizational behaviour.

CO2**:** Understand theories associated with behaviour of individuals working with groups. CO3: Understand the different theories of motivation.

CO4: Understand the different theories and styles of leadership.