SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

DEPARTMENT OF APPLIED SCIENCE & HUMANITIES

S1 & S2

PH100	**Engineering Physics**	**4**	**Jimi K J**

CO1	Analyze the different types of oscillations and how these leads to the production of different types of waves like mechanical waves, sound waves and light waves.
CO2	Apply the properties of light for the accurate measurement of various physical quantities such as refractive index, thickness, wave length of light and application of laser in optic fiber communication.
CO3	Analyze the basic principles of superconductivity and apply it in various fields such as Power transmission, Transportation, and in diagnosis.
CO4	Apply the knowledge of basic Quantum Mechanics and Schrodinger wave equation to physical problems in atomic and subatomic levels.

PH110	**PHYSICS LAB**	**1**	**Ms.Jimi K.J**

CO1	Apply the theories of interference and diffraction to compute the diameter of very small wires and wavelength of different colours of light
CO2	Design experiments to study the wave parameters using Meldes Apparatus and CRO.
CO3	Conduct experiments for the accurate measurement of the acceptance angle and numerical aperture of optic fibre and the fill factor of the solar cell.
CO4	Prepare laboratory reports on the details of apparatus and applications of experiments.

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

CY100	Engineering chemistry	4	Dr. Sukhila Krishnan

CO1	Have knowledge of many basic concepts of chemistry which can be applied in different engineering aspects.
CO2	Know many novel / advanced engineering materials, storage devices and their working principles etc
CO3	Develop analytical capabilities to characterize, transform and utilize materials in engineering and apply it in solving engineering related problems
CO4	Acquire knowledge on certain environmental issues and safer methods of practicing engineering

CY110	Chemistry Lab	1	Dr.Sukhila Krishnan

CO1	Acquire knowledge in practical side of chemistry required to solve engineering problems.
CO2	Apply and demonstrate the fundamental concepts of Engineering chemistry.
CO3	Analyse the quality of water used for industrial and societal needs.
CO4	Investigate the properties of certain engineering materials and evaluate the safety aspects of them during their applications.

MA 101	Calculus	4	Ms.Jemcy

CO1	Apply the concept of limit and convergence in physical phenomena.
CO2	Apply the concept of differentiation of single or multiple variable functions.
CO3	Apply the idea of vectors and vector operators in practical situations.
CO4	Analyze the concept of mensuration in a region of two and three dimensional space.

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

MA102	**Differential Equation**	**4**	**Ms.Jemcy**

CO1	Identify and solve homogeneous and non homogeneous ordinary differential equations
CO2	Analyze and represent periodic functions as an infinite series through Fourier series.
CO3	Create and solve partial differential equation which are widely used in the modelling and analysis of a wide range of physical phenomena.

BE100	**Engineering Mechanics**	**4**	**Mr.Aoop Lonappan**

CO1	To apply and demonstrate the concepts of mechanics to practical engineering problems
CO2	Apply the concept of support reactions and vector analysis in finding solutions for determinate structures
CO3	Determine the properties of planes and solids and apply the concepts of dynamics to practical engineering problems
CO4	Apply fundamental concepts of Friction to practical problems both statics and dynamics

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ME 110	**Mechanical Engineering Workshop**	**1**	**BALAKRISHNAN**

CO1	The students go training in sheet metal can suggest method to manufacture an item with less time and money
CO2	The students got the training in the carpentry section is capable of selecting the material and methods to manufacture using machines as well as manually
CO3	The students got training in the welding shops are capable of suggesting methods to weld an item without disturbing the property of base material
CO4	The students got training in the welding shops are capable of suggesting methods to weld an item without disturbing the property of base material
CO5	Understanding the forge-ability of different materials in cold and hot states.
CO6	Students can suggest the methods of casting an item so that minimum rejection will be there in the products made

ME100	**Basics Of Mechanical Engineering**	3	**Mathews**

CO1	Enable students to distinguish different processes around them by applying knowledge in thermodynamics
CO2	Students will be able to analyse the working of different energy conversion devices and automobiles.
CO3	Students will be able to differentiate between refrigeration and air conditioning devices and interpret their working
CO4	Analyse the key processes and machines involved in manufacturing engineering.

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA

BE110	**Engineering Graphics**	3	**Dr.Nixon**

CO1	Able to prepare the orthographic projections of points; straight lines placed in various quadrants and various solids
CO2	Ability to draw and interpret the sectioned views and development of solids
CO3	Ability to draw the various types of projections in CAD software
CO4	Ability to draw the projections of intersection of solids and prepare the isometric and perspective views of various solids.

EE 110	**ELECTRICAL ENGINEERING WORKSHOP**	**2**	**Ms. MERRY MATHEW PADAYATTIL**

CO1	Understand different types of wires ,cables and other accessories used in the wiring
CO2	Wire simple lighting circuits for domestic buildings,distinguish between light and power circuits
CO3	To measure electrical circuit parameters and current,voltage and power in a circuit
CO4	Understand safety aspects of electrical systems and importance of protective measures

EC 110	**Basic Electronics Workshop**	**2**	**Jisha Jacob, Vidyamol K, Ambily Francis**

CO1	Familiarise electronic components and equipment
CO2	Fabricate PCBs
CO3	Testing of Electronic Circuits
CO4	Familiarisation and analysis of electronic systems

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CE100	**BASICS OF CIVIL ENGINEERING**	**3**	**Arun T**

CO1	Students will be able to illustrate fundamental aspects of civil Engineering
CO2	Students will be able to plan
CO3	Students will be able to explain the concepts of surveying and take horizontal and vertical measurements
CO4	Students will be able to illustrate the uses of various building materials and explain the method of construction of different building components
CO5	Students will be able to discuss various services in a building

EC 100	**BASICS OF ELECTRONICS ENGINEERING**	**3**	**SANTHOSH KUMAR MS / Deepak Joseph**

CO1	To get basic idea about types, specification and common values of passive and active components.
CO2	To familiarize the working of diodes, transistors, MOSFETS and integrated circuits.
CO3	To understand the working of rectifiers, amplifiers and oscillators.

EE 100	**BASICS OF ELECTRICAL ENGINEERING**	**3**	**Ms MERRY MATHEW PADAYATTIL**

CO1	Get preliminary knowledge in basic elementary concepts of electrical engineering.
CO2	Analyze and solve the Electric and Magnetic circuits and gain the knowledge of various energy sources used for power generation including renewable sources.
CO3	Understand the AC fundamentals (single phase & three phase) and numerical problems.
CO4	Identify the type of electrical machines for a given application and Able to know the basic principle behind the AC and DC machines.

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BE103	**Introduction to Sustainable Engineering (CS)**	**3**	**Mr. Willson Joseph C** **Ms. Anusree**

CO1	Assess and evaluate various dimensions of sustainability.
CO2	Analyze various causes for pollution and develop Sustainable solutions.
CO3	Develop Sustainable solutions to energy related challenges using various tools and methods.
CO4	Apply the concepts of Sustainable development in the Engineering and Technology.

CE100	**BASICS OF CIVIL ENGINEERING (for BT)**	**3**	**AISWARYA M S**

CO1	Students will be able to illustrate the fundamental aspects of Civil Engineering
CO2	Students will be able to plan and set out a building
CO3	Students will be able to explain the concepts of surveying for making horizontal and vertical measurements
CO4	Students will be able to illustrate the use of various building materials and explain the method of construction of different components of a building
CO5	Students will be able to discuss various services in a building

BE101 01	**INTRODUCTION TO CIVIL ENGINEERING**	**3**	**AISWARYA M S**

CO1	Students will be able to explain the importance of Civil Engineering in the infrastructural development of the society.
CO2	Students will be able to describe different types of buildings as per National Building Code of India
CO3	Students will be able to illustrate the types, uses, properties and manufacturing of various building materials
CO4	Students will be able to explain the method of construction of different components of a building

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BE101 03	**INTRODUCTION TO ELECTRICAL ENGINEERING**	**3**	**Ms MERRY MATHEW PADAYATTIL**

CO1	To apply the basic laws and concepts of Engineering in Electrical and magnetic circuits.
CO2	To Summarize the AC fundamentals
CO3	To Analyze AC circuits (single phase and three phase) with different load conditions.
CO4	To compare various methods of electrical power measurement.

BE101 06	**INTRODUCTION TO CHEMICAL ENGINEERING**	**3**	**Dr UMA KRISHNAKUMAR**

CO1	Demonstrate the ability to analyze basic concepts of Chemical Engineering
CO2	Analyze the relationship of Chemical Engineering with other disciplines
CO3	Ability to analyze chemical processes and the corresponding equipments
CO4	Identify and solve engineering problems during production

BE102	**DESIGN ENGINEERING**	**4**	**DEEPAK JOSEPH**

CO1	Able to appreciate the different elements involved in good design and to apply them in practise when called for.
CO2	Aware of the product oriented and user oriented aspects that make the design a success
CO3	Will be capable to think of innovative designs incorporating different segments knowledge gained in the course
CO4	Students will have a broader perspective of design covering function, cost, environmental sensitivity, safety and other factors other than engineering analysis.

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BE10105	**Introduction to Computing and Problem Solving**	**3**	**Ms. Anusree** **Mr. Willson Joseph**

CO1	Identify the working of digital computer and understand the basic concepts of programming languages.
CO2	Design the algorithmic solution to problems and convert algorithms to Python programs
CO3	Examine modular problems and design solution with python features.
CO4	Implement basic object oriented concepts using Python languages.