SESSION 2022-23

COURSE OUTCOMES

Subject Name: Engg. Physics **Semester:** I&II

AKTU Code: BAS-101/BAS-201 **NBA Code:** C-101

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Taxonomy Level
C101.1	To explain the distribution of energy in black body radiation and to understand the difference in particle and wave nature with explanation of Compton effect and Schrodinger wave equation.	**K2, K3**
C101.2	To understand the concept of displacement current and consistency of Ampere's law and also the properties of electromagnetic waves in different medium with the use of Maxwell's equations.	**K2, K4**
C101.3	To understand the behavior of waves through various examples/applications of interference and diffraction phenomenon and the concept of grating and resolving power.	**K3**
C101.4	To know the functioning of optical fiber and its properties and applications. To understand the concept, properties and applications of Laser.	**K2, K3**
C101.5	To know the properties and applications of superconducting materials and nano materials.	**K2**

Subject Name: Engineering Chemistry **Semester:** I/II

AKTU Code: BAS102/BAS202 **NBA Code:** C-102

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C102.1	Get an understanding of the theoretical principles of chemistry of molecular structure, bonding and properties, Chemistry of advanced materials (liquid crystals, Nanomaterials, Graphite & Fullerene) as well as the principles of Green Chemistry	K3
C102.2	Apply the fundamental concepts of determination of structure with various spectral techniques and stereochemistry.	K4
C102.3	Utilize the theory of construction of electrodes, batteries and fuel cells in redesigning new engineering products and categorize the reasons for corrosion and study methods to control corrosion and develop understanding of Chemistry of Engineering materials (Cement)	K3
C102.4	Develop understanding of the sources, impurities and hardness of water, apply the concepts of determination of calorific values and analyze the coal.	K3
C102.5	Develop the understanding of Chemical structure of polymers and its effect on their various properties when used as engineering materials. Understanding the applications of specific polymers and Chemistry applicable in industrial purposes.	K3

Subject Name: Engg. Mathematics –I **Semester:** I

AKTU CODE: BAS -103 **NBA CODE:** C-103

COURSE OUTCOMES:

Code	Corse Outcomes: Students will be able to	Bloom's Knowledge Level
C103.1	Understand the concept of complex matrices, Eigen values, Eigen vectors and apply the concept of rank to evaluate linear simultaneous equations	K2 & K5
C103.2	Remember the concept of differentiation to find successive differentiation, Leibnitz Theorem, and create curve tracing, and find partial and total derivatives	K1,K6 & K5
C103.3	Applying the concept of partial differentiation to evaluate extrema, series expansion, error approximation of functions and Jacobians	K3 &K5
C103.4	Remember the concept of Beta and Gamma function; analyze area and volume and Dirichlet's theorem in multiple integral	K1 & K4
C103.5	Apply the concept of Vector Calculus to analyze and evaluate directional derivative, line,surface and volume integrals.	K3, K4& K5

Subject Name: Environment and ecology. **Semester:** I&II

AKTU Code: BAS104/BAS204 **NBA Code:** C-104

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C104.1	Gain in-depth knowledge on natural processes that sustain life, and govern economy.	K2
C104.2	Estimate and Predict the consequences of human actions on the web of life, global economy and quality of human life.	K3
C104.3	Develop critical thinking for shaping strategies (scientific, social, economic and legal) for environmental protection and conservation of biodiversity, social equity and sustainable development.	K4
C104.4	Acquire values and attitudes towards understanding complex environmental-economic social challenges, and participate actively in solving current environmental problems and preventing the future ones.	K3
C104.5	Adopt sustainability as a practice in life, society and industry.	K3

Subject Name: Soft Skills **Semester:** I&II

AKTU Code: BAS105/BAS205 **NBA Code:** C-105

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C105.1	Write professionally in simple and correct English.	K1, K2
C105.2	Demonstrate active listening with comprehension, and the ability to write clear and well-structured emails and proposals.	K1, K2
C105.3	Learn the use of correct body language and tone of voice to enhance communication.	K1, K2
C105.4	Acquire the skills necessary to communicate effectively and deliver presentations with clarity and impact	K1, K2
C105.5	Understand and apply some important aspects of core skills, like Leadership and stress management.	K1, K2

Subject Name: Programming for Problem Solving **Semester:** I&II

AKTU Code: BCS-101/BCS-201 **NBA Code:** C-106

COURSE OUTCOMES:

Code	**After completion of this course, the students will be able to:**	**Bloom's Knowledge Level**
C106.1	To Develop Simple Algorithms for Arithmetic and Logical Problems.	K2, K3
C106.2	To Translate the Algorithms to Programs & Execution (in C Language).	K3
C106.3	To Implement Conditional Branching, Iteration and Recursion.	K3
C106.4	To Decompose a Problem into Functions and Synthesize a Complete Program Using Divide and Conquer Approach.	K4
C105.5	To Use Arrays, Pointers and Structures to Develop Algorithms and Programs.	K2, K3

Subject Name: FME **Semester:** I&II

AKTU Code: BME-101/BME-201 **NBA Code:** C-107

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C107.1	Apply the concept of force resolution and stress and strain to solve basic problems	**K3**
C107.2	Understand the construction details and working of internal combustion engines, electric vehicle and hybrid vehicles	**K2**
C107.3	Explain the construction detail and working of refrigerator, heat pump and air conditioner.	**K2**
C107.4	Understand fluid properties, conservation laws and hydraulic machinery used in real life.	**K2**
C107.5	Understand the working principle of different measuring instrument and mechatronics with their advantages, scope and Industrial application.	**K2**

Subject Name: FUNDAMENTALS OF ELECTRICAL ENGINEERING **Semester:** I&II

AKTU Code: BEE-101/BEE201 **NBA Code:** C-108

COURSE OUTCOMES:

Code	After completion of this course , the students will be able to:	Bloom's Taxonomy Level
C108.1	Apply the concepts of KVL/KCL and network theorems in solving DC circuits.	**K3**
C108.2	Analyze the steady state behavior of single phase and three phase AC electrical circuits.	**K4**
C108.3	Identify the application areas of a single phase two winding transformer as well as an auto transformer and calculate their efficiency. Also identify the connections of a three phase transformer.	**K2**
C108.4	Illustrate the working principles of induction motor, synchronous machine as well as DC machine and employ them in different area of applications.	**K4**
C108.5	Describe the components of low voltage electrical installations and perform elementary calculations for energy consumption. Apply the concept of force resolution and stress and strain to solve basic problems.	**K2**

Subject Name: FUNDAMENTALS OF ELECTRONICSENGINEERING **Semester:** I&II

AKTU Code: BEC101/BEC201 **NBA Code:** C-109

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C109.1	Describe the concept of PN Junction and devices.	**K2**
C109.2	Explain the concept of BJT, FET and MOFET.	**K2**
C109.3	Apply the concept of Operational amplifier to design linear and non-linear applications	**K2,K3**
C109.4	Perform number systems conversions, binary arithmetic and minimize logic functions.	**K2**
C109.5	Describe the fundamentals of communication technologies.	**K2**

Subject Name: PHYSICS LAB **Semester:** I&II

AKTU Code: BAS-151/BAS-251 **NBA Code:** C-110

COURSE OUTCOMES:

Code	After completion of this course , the students will be able to:	Bloom's Knowledge Level
C110.1	To determine wavelength of given light by various optical experiments.	K1
C110.2	To determine the focal length of combination of lens and verify by Newton's formula.	K1,K2
C110.3	To find out numerical aperture and to calculate attenuation constant for an optical fibre.	K2,K3
C110.4	To determine the various physical quantities of given materials by different experiments.	K1,K2,K3
C110.5	To determine the variation of magnetic field with the distance along the axis of a current carrying coil and estimate the radius of coil.	K3

Subject Name: ENGINEERING CHEMISTRY LAB **Semester:** I&II

AKTU Code: BAS152/BAS252 **NBA Code:** C-111

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C111.1	Get an understanding of the use of different analytical instruments.	**K3**
C111.2	Measure the molecular / system properties such as surface tension, viscosity, conductance of solution, chloride and iron content in the water.	**K3**
C111.3	Measure the hardness and alkalinity of the water.	**K3**
C111.4	Know the fundamental concepts of the preparation of phenol formaldehyde & urea formaldehyde resin, adipic acid and Paracetamol.	**K3**
C111.5	Estimate the rate constant of reaction.	

Subject Name: ENGLISH LANGUAGELAB **Semester:** I&II

AKTU Code: BAS155/BAS255 **NBA Code:** C-112

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C112.1	Understand the basic objective of the course by being acquainted with specific dimensions of communication skills i.e. reading, writing, listening, thinking and speaking.	**K2**
C112.2	Create substantial base by the formation of strong professional vocabulary for its application at different platforms and through numerous modes as comprehension, reading, writing and speaking etc.	**K2**
C112.3	Apply it at their work place for writing purposes such as presentation/official drafting/administrative communication and use it for document/project/report/research paper writing.	**K2**
C112.4	Evaluate the correct and error-free writing by being well-versed in rules of english grammar and cultivate relevant technical style of communication &presentation at their work place and also for academic uses.	**K2**
C112.5	Apply it for practical and oral presentation purposes by being honed up in presentation skills and voice-dynamics. They will apply techniques for developing interpersonal communication skills and positive attitude leading to their professional competence..	**K2**

Subject Name: PPS LAB **Semester:** I&II

AKTU Code: BCS151/BCS251 **NBA Code:** C-113

COURSE OUTCOMES:

Code	After completion of this course , the students will be able to:	Bloom's Knowledge Level
C113.1	Able to implement the algorithms and draw flowcharts for solving Mathematical and Engineering problems.	**K3, K4**
C113.2	Demonstrate an understanding of computer programming language concepts.	**K3, K2**
C113.3	Ability to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.	**K6, K4**
C113.4	Able to define data types and use them in simple data processing applications he/she must be able to use the concept of array of structures.	**K1, K5**
C113.5	Develop confidence for self-education and ability for life-long learning needed for Computer language.	**K3, K4**

Subject Name: BASIC ELECTRICAL ENGG. LAB **Semester:** I&II

AKTU Code: BEE151/BEE251 **NBA Code:** C-114

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C114.1	Conduct experiments illustrating the application of KVL/KCL and network theorems to DC electrical circuits.	K3
C114.2	Demonstrate the behavior of AC circuits connected to single phase AC supply and measure power in single phase as well as three phase electrical circuits.	K4
C114.3	Perform experiment illustrating BH curve of magnetic materials.	K3
C114.4	Calculate efficiency of a single phase transformer and DC machine.	K4
C114.5	Perform experiments on speed measurement and reversal of direction of three phase induction motor and Identify the type of DC and AC machines based on their construction. Analyze and draw isometric projections of objects..	K4

Subject Name: WORKSHOP **Semester:** I&II

AKTU Code: BWS-151/BWS-251 **NBA Code:** C-115

COURSE OUTCOMES:

Code	After completion of this course , the students will be able to:	Bloom's Knowledge Level
C115.1	Use various engineering materials, tools, machines and measuring equipments.	**K3**
C115.2	Perform machine operations in lathe and CNC machine.	**K3**
C115.3	Perform manufacturing operations on components in fitting and carpentry shop.	**K3**
C115.4	Perform operations in welding, moulding, casting and gas cutting.	**K3**
C115.5	Fabricate a job by 3D printing manufacturing technique	**K3**

Subject Name: ELECTRONICS ENGINEERINGLAB **Semester:** I&II

AKTU Code: BEC-151/ BEC-251 **NBA Code:** C-116

COURSE OUTCOMES:

Code	After completion of this course , the students will be able to:	Bloom's Knowledge Level
C116.1	Understand working of electronics lab equipment.	**K2**
C116.2	Understand working of pn junction and zener diode its applications.	**K2,K3**
C116.3	Understand working and concept of BJT and op-amp.	**K2**
C116.4	Understand the concept Logic gate and designing.	**K2,K3**
C116.5	Understand the process of circuit designing and soldering.	**K2,K3**

Subject Name: EG&D LAB **Semester:** I&II

AKTU Code: BCE151/BCE251 **NBA Code:** C-117

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C117.1	Use scales and draw projections of objects.	K2
C117.2	Explain views of solids and their sectional surfaces.	K2
C117.3	Analyze and draw isometric projections of objects.	K4
C117.4	Demonstrate orthographic representation of perspective views using modern tools.	K3
C117.5	Apply AutoCAD software for creation of engineering drawing and models	K3

Subject Name: ENGINEERING MATHS II **Semester:** II

AKTU Code: BAS203 **NBA Code:** C-118

COURSE OUTCOMES:

Code	After completion of this course, the students will be able to:	Bloom's Knowledge Level
C118.1	Remember the concept differentiation to evaluate LDE of nth order with constant coefficient and LDE with variable coefficient of 2^{nd} order.	**K1&K5**
C118.2	UnderstandandapplytheconceptofLaplaceTransformtoevaluatedifferentialequations.	**K2,K3&K5**
C118.3	Understand the concept of convergence to analyze the convergence of series and expansion of the function for Fourier series.	**K2&K4**
C118.4	Apply the concept of analyticity, Harmonic function and create the image of function applying conformal transformation	**K3,K6&K3**
C118.5	Apply the concept of Cauchy Integral theorem, Cauchy Integral formula, singularity and calculus of residue to evaluate integrals.	**K3&K5**