

K.D.K.COLLEGE OF ENGINEERING, NAGPUR

Department of Basic Science and Humanities

(First Year)

SECOND SEMESTER- COURSE OUTCOMES

BESII-1 Applied Mathematics – II	
CO201.1	Apply the concept of Beta and Gamma functions to solve improper integrals.
CO201.2	Construct the plane curve and determine the length of curve , area , volume and surface area.
CO201.3	Apply the concept of double and triple integrals of different coordinate systems to measure area , mass , volume and center of gravity.
CO201.4	Apply the concept of Vector algebra and calculus to resolve the components of vectors in various directions and find directional derivatives. Apply the concept of line integral to solve engineering problems.
CO201.5	Analyze the correlation between the variables. Apply a method of least square to find the curve of best fit for the given data and solve statistical problems using computational tools.
CO201.6	Solve problems of interpolation of unequal intervals of arguments and find analytical solutions to difference equations.
BESII-2T Advanced Engineering Materials	
CO202.1	Apply the basic concepts of electrical conductivity and band theory to classify solids into conductors, semiconductors and insulators
CO202.2	Recall the basic ideas of semiconductor physics and relate them to devices such as diodes and transistors and their applications in engineering
CO202.3	Recall the basic concepts in magnetism and make use of them to classify magnetic materials in different types and to relate to their engineering applications

CO202.4	Relate basic ideas of electrical conduction and magnetism to superconductors and apply them to classify superconductors in different types
CO202. 5	Find how to extend the basic concepts of quantum transitions to explain the characteristics, working and applications of different lasers and to solve relevant numerical problems
CO202. 6	Make use of quantum concepts to explain the properties and applications of different Nanomaterials
BESII-2P Advanced Engineering Materials Practical	
CO202.1	Create the basic circuitries in Electronics. Demonstrate and understand the basic principles of operation of semiconductor diodes and transistors. Differentiate between the types of semiconductors through band gap experiment.
CO202.2	Analyze the magnetic field based experiment to distinguish the materials. Apply the concept of diffraction for the optical based devices using LASER beam.
CO202.3	Work effectively in a small team to complete a complex set of tasks.
BESII-3T Applied Chemistry	
CO203.1	Rationalize the periodic properties and analyze the Microscopic Chemistry in terms of atomic and molecular orbital.
CO203.2	Rationalize bulk properties and processes using Thermodynamic processes.
CO203.3	Understand the cause of corrosion, its consequences and methods to minimize corrosion.
CO203.4	Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques.
CO203.5	Apply the principles of green chemistry in designing alternative reaction methodologies to minimize hazards and environmental degradation.
CO203.6	Know about treatment of water and its applications in industry.
BESII-3P Applied Chemistry Laboratory	
CO203.1	Measure molecular/system properties like, concentrations, surface tension, conductance of solutions etc.
CO203.2	Estimate the soluble impurities present in the given water sample.
CO203.3	Handle the different instruments used in chemistry laboratory.

BESII-4T Computational Skills	
C204.1	To get idea of algorithm, flowchart and basic concept of C programming language
C204.2	To apply basic concepts of loops, arrays and various searching and sorting techniques in C
C204.3	To learn problem solving techniques using function and recursion
C204.4	To understand advanced concept of c like structures and pointers
BESII-4P Computational Skills Practical	
C204.1	To learn basic concepts of c using various conditional and looping statements
C204.2	To learn problem solving techniques using arrays and pointers
C204.3	To implement fundamentals of strings and functions
BESII-5P Workshop Practices	
CO105.1	Read and interpret job drawing and plan operations
CO105.2	Identify and select proper materials, tools, equipment, machines and proper operational parameters.
CO105.3	Set tools, work pieces and machines for desired operations.
CO105.4	Complete job of Carpentry, Fitting, Welding and smithy as per job drawing in allotted time.
CO105.5	Use safety equipment and follow safety procedures during operations.
CO105.6	Inspect the job for confirming desired dimensions and shape.
BESII-6T Basic Electrical Engineering	
CO206.1	Apply the basic laws of electric circuits to calculate the unknown quantities.
CO206.2	Apply the basic fundamental of magnetic circuits to calculate the unknown quantities.
CO206.3	Analyze and interpret the sinusoidal electrical quantities and parameters mathematically as well as graphically for 1- phase/3-phase AC circuits.
CO206.4	Remember need, construction, principle, types and applications of 1 phase

	transformer & determine the power losses/efficiency and voltage drop/voltage regulation.
BESII-7T Engineering Mechanics	
CO207.1	Understand the effect of force on the particle, , Resolution and Resultant of forces, Static equilibrium conditions
CO207.2	Understand the various types of Supports, type of beams, method of analysis of trusses and frictional force.
CO207.3	Apply the basic knowledge to find the centre of gravity, moment of inertia and product of inertia, Concept of principle of virtual work,
CO207.4	Understand the D'Alembert's Principle and Methods of Momentum
BESII-8T Indian Culture and Constitution	
CO208.1	Students will become aware of Indian culture and civilization And their role in the development of society.
CO208.2	Students will understand Industrial work culture.
CO208.3	Students will be sensitized towards professional ethics.
CO208.4	Students will understand Indian Constitution and governance of the country.
CO208.5	Students will be able to understand the structure and system of work organization.