

# K.D.K.COLLEGE OF ENGINEERING, NAGPUR

## Department of Basic Science and Humanities

### (First Year)

#### B. TECH. SECOND SEMESTER- COURSE OUTCOMES

<b>BESII-1 Applied Mathematics – II</b>	
CO201.1	Analyze real world scenarios to recognize when integrals are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology, if appropriate) in order to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate the results.
CO201.2	Define and understand the geometry of vector differential operators and line and surface integrals.
CO201.3	Explain and apply principles of study design and data collection.
CO201.4	Develop an ability to identify, formulate and/or solve real world problems.
CO201.5	Understand the impact of scientific and engineering solutions in a global and societal context.
<b>BESII-2T Advanced Engineering Materials</b>	
CO202.1	Learn the concept of formation of energy bands and to classify solids on its basis.
CO202.2	Identify and explain different types of diodes, transistors and its applications
CO202.3	Learn the concepts of magnetism and super conductivity, classify and analyze various types of magnetic and superconducting materials.
CO202.4	Learn and explain quantum transitions and apply it to working of lasers
CO202. 5	Learn the concept of nano materials and compare its properties with those of bulk materials.
<b>BESII-2P Advanced Engineering Materials Practical</b>	

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.
<b>BESII-3T Applied Chemistry</b>	
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 & understand the causes of corrosion, its consequences and methods to minimize corrosion.
CO203.3	Distinguish the ranges of the electromagnetic spectrum used for exciting different molecular energy levels in various spectroscopic techniques.
CO203.4	Apply the principles of green chemistry in designing alternative reaction methodologies to minimize hazards and environmental degradation.
CO203.5	Know about treatment of water and its applications in industry.
<b>BESII-3P Applied Chemistry Laboratory</b>	
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.
<b>BESII-4T Computational Skills</b>	
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
<b>BESII-4P Computational Skills Practical</b>	
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
<b>BESII-5P</b>	<b>Workshop Practices</b>
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.
<b>BESII-6T</b>	<b>Basic Electrical Engineering</b>
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.
<b>BESII-7T</b>	<b>Engineering Mechanics</b>
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
<b>BESII-8T</b>	<b>Indian Culture and Constitution</b>
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.