

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 technique of Integral Calculus in various engineering problems using Gamma , Beta function etc.
CO201.2	Trace curves and can apply this knowledge to evaluate area between two curves , surface area , volume of solid of revolution
CO201.3	Evaluate double and triple integrals and can apply this technique for finding area between two curves, volume, mass and C.G in engineering problems.
CO201.4	Explain the basic concepts of Vector Algebra, Vector Calculus and apply it to Engineering Problems.
CO201.5	Analyze line, surface and volume integrals and evaluate multiple integrals using relation between single, double and triple integrals.
CO201.6	Identify curves, calculate correlation coefficient, regression lines and also apply the technique of finite differences for solving difference equations.
BESII-2T Advanced Physics	
CO202.1	Explain the basic principles concerned to laser, Wave optics and their applications in the field of engineering.
CO202.2	Demonstrate theoretical as well as experimental concepts concerned to Electron ballistics and correlate its applications for engineering domain.
CO202.3	Elaborate of the concepts and principles concerned to Electron optics with demonstration of devices based on the principle.

CO202.4	Explain the concepts and principles concerned to Fibre optics, classify Fiber optic sources, detectors and list its applications. Explain the concepts and principles concerned to Nanoscience. Classify, compare nano materials and list out its applications.
BESII-2P	Advanced Physics Practical
CO202.1	Measure the various electrical and electronics based parameters viz. Amplitude, frequency, phase shift and time period using CRO
CO202.2	Apply the concept of interference in Newton's ring experiment to determine the radius of curvature of lens. Apply the concept of diffraction, birefringence for the various optical based devices using Sodium light and LASER beam. Apply the concept of fibre optic cables to determine the numerical aperture of the fibre cables and to get acquainted with its use in daily life
CO202.3	Work effectively in a small team to complete a complex set of tasks related to advanced physics.
BESII-3T	Material Chemistry
CO203.1	Demonstrate the basic significance of non-Conventional energy sources, Bio-Fuels and their applications.
CO203.2	Make use of liquid fuels in different types of engines and explain the basic concepts of combustion process minimizing the environmental pollution.
CO203.3	Explain the basics of lubricants, classify, compare and select the proper lubricants for specific purposes
CO203.4	Identify, classify contemporary polymers, composites from its properties and explain its applications also explain the basic concepts of nanomaterials, classify, distinguish Carbon nano tubes and its application in the field of medicine, environment and electronics
BESII-3P	Material Chemistry Practical
CO203.1	Determine various properties of lubricants like Viscosity, viscosity index, flash point, cloud and pour point, acid value, saponification value and consistency.

CO203.2	Develop the ability to select lubricants for various purposes
CO203.3	Analyze coal and elucidate its quality and utility
BESII-4T	Engineering Mechanics
C204.1	Make use of vector quantities and explain the resultant of 2D/3D force systems.
C204.2	Analyze the effect of forces on the rigid bodies with the help of various laws and theories.
C204.3	Evaluate Moment of Inertia and explain the Principle of Virtual work applied to equilibrium of Mechanisms, simple beam and truss
C204.4	Apply the basic knowledge obtained in engineering mechanics in solving the engineering problems.
BESII-4P	Engineering Mechanics Practical
C204.1	Perform the test to ascertain the equilibrium of a body under various systems of forces.
C204.2	Perform the tests to understand the terminology related to simple lifting machine, friction, mass moment of inertia.
C204.3	Calculate and draw a graphical solution to problems of equilibrium.
BESII-5T	Advanced Electrical Engineering
CO105T.1	Remember the concept of electrical power system and understand about conventional/renewable energy sources and recognize the necessity of electrical earthing, safety & protecting devices.
CO105T.2	Understand the construction, principle, applications and performance characteristics of DC machines.
CO105T.3	Determine monthly energy bill as per the tariff of power distribution Company and Recognize the electrical energy illumination sources and their selection.
CO105T.4	Understand the construction, principle, types, applications and performance characteristics 3 phase & 1 Phase Induction motors.
BESII-6P	Engineering Graphics - II practical
C206.1	Design and draft the objects with the help of Auto-cad.

C206.2	Know the internal parts of any object by Sections of Solids. Draw the develop the lateral surfaces of solids.
C206.3	Understand the interpretation of missing views and missing lines
BESII-7P Workshop practical	
C106.1	Make use of fitting tool, equipments and measuring instruments, and perform one job in fitting shop.
C106.2	utilize the carpentry tools, equipments and measuring instruments, and perform one job in carpentry shop.
C106.3	use the welding and smithy tools, equipments and measuring instruments, and perform one job in welding shop and smithy shop.
BESII-8T Ethical Science	
CO208.1	To understand the civic and law structure of society.
CO208.2	Applying psychology principal on human working conditions and have humanistic approach.
CO208.3	To understand the ethical concept of society in which on lives and be acquainted with the working environment and organization.
CO208.4	To gain knowledge of the Country's Constitution and political structure of society