

K.D.K.COLLEGE OF ENGINEERING, NAGPUR

Department of Basic Science and Humanities

(First Year)

B. Tech. FIRST SEMESTER (CBCS)- COURSE OUTCOMES

BESI-1T	
Mathematics - I	
CO101.1	Analyze real world scenarios to recognize when derivatives or 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
CO101.2	Appreciate ODE and system of ODEs concepts that are encountered in the real world, understand and be able to communicate the underlying mathematics involved to help another person gain insight into the situation.
CO101.3	Apply knowledge of mathematics, physics and modern computing tools to scientific and engineering problems
CO101.4	Develop an ability to identify, formulate and/or solve real world problems.
CO101.5	Understand the impact of scientific and engineering solutions in a global and societal context.
BESI-2T	
Applied Physics	
CO102.1	Apply concepts in interference and diffraction to solve relevant numerical problems and to relate to relevant engineering applications
CO102.2	Learn the basic concepts of dual nature of matter and wave packet and apply them to analyze various relevant phenomena and to solve related numerical problems

CO102.3	Recall the basic concepts of crystal structure and apply them in solving numerical problems based on them and in relating to applications for determination of crystal structure.
CO102.4	Relate the basic idea of total internal reflection to the propagation of light in an optical fiber and make use of the fiber concepts to solve numerical problems and relate to applications in engineering
CO102.5	Find how to extend the basic concepts of motion of charged particles in electric magnetic fields to solve numerical problems and to relate to applications in electron optic devices and CRO
BESI-2P Applied Physics Practical	
CO102.1	Measure the various electrical and electronics based parameters viz. A.C. Voltage, frequency, phase shift and time period using CRO.
CO102.2	Apply the concept of interference in Newton's ring experiment to determine the radius of curvature of the lens. Apply the concept of diffraction, birefringence for the various optical based devices using Sodium light. Apply the concept of fiber optic cables to determine the numerical aperture of the fiber cables and to get acquainted with its use in daily life.
CO102.3	Work effectively in a small team to complete a complex set of tasks.
BESI-3T Energy and Environment	
CO103.1	Obtain the knowledge of solid and gaseous fuels and their Calorific value determination
CO103.2	Recognize the type of liquid fuels and their uses in IC engines.
CO103.3	Apply the knowledge about the use of alternative sources of energy & utilize solid waste as an energy source.
CO103.4	Analyze the impacts of Industrial pollution and its control.

CO103.5	Develop innovative ideas for use of advanced materials in sustainable development.
BESI-3P Energy and Environment Practical	
CO103.1	The practical knowledge of handling chemicals.
CO103.2	Analyzing a broad foundation in energy and environment that stresses scientific reasoning and analytical problem solving with a molecular perspective.
CO103.3	Experimental techniques using modern instrumentation.
BESI-4T Communication Skills	
CO104T.1	Students will be able to overcome barriers of communication.
CO104T.2	Students will acquire public speaking skills and handle group situations professionally.
CO104T.3	Students will be able to comprehend passages and compose paragraph.
CO104T.4	Students will be able to construct error free and meaningful sentences in English.
BESI-4P Communication Skill practical	
CO104P.1	Students will be able to overcome listening barriers of communication.
CO104P.2	Students will be able to enhance their comprehending skills and speaking skills.
CO104P.3	Students will be able to give effective presentations and handle group situations professionally.

CO104P.4	Students will be able to use figurative language in their formal as well as informal communication.
BESI-5T Engineering Graphics	
C105.1	The learner will be able to understand the basic knowledge of engineering graphics such as instruments, lines, dimensioning techniques, scales, sheet layout. Construct the various engineering curves using the drawing instruments and basic of orthographic projection through drawing the projection of point and line.
C105.2	The learner will be able to understand projections of different types of planes (2D) and solids(3D) and will be able to draw different views of plane and solids.
C105.3	The learner will be able to understand concept of sectioning and development of lateral surfaces of solid and will be able to represent it.
C105.4	Apply the visualization skill to draw a simple isometric projection/view from given orthographic views precisely using drawing equipment.
BESI-5P Engineering Graphics Lab	
C106.1	Draw the fundamental engineering objects using basic rules and able to construct the lines, simple geometries. Construct the various engineering curves using the drawing instruments.
C106.2	Draw two dimensional and three dimensional objects, precisely using drawing equipment.
C106.3	Draw the development of lateral surfaces for cut section of geometrical solids precisely using drawing equipment.
C106.4	Draw a simple isometric projection from given orthographic views precisely using drawing equipment.

BESI-6T		Basics of Civil and Mechanical Engineering	
C106.1	Introduction to what constitutes Civil Engineering. Identifying the various areas available to pursue and specialize within the overall field of Civil Engineering. Highlighting the depth of engagement possible within each of these areas.		
C106.2	Exploration of the various possibilities of a career in this field. Understanding the vast interfaces this field has with the society at large. Providing inspiration for doing creative and innovative work.		
C106.3	Showcasing the many monuments, heritage structures, nationally important infrastructure and impressive projects to serve as sources of inspiration. Highlighting possibilities for taking up entrepreneurial activities in this field. Providing a foundation for the student to launch of upon an inspired academic pursuit into this branch of engineering.		
C106.4	Discuss several manufacturing process and identify suitable process. Explain various types of mechanism and its application.		
C106.5	Describe and compare the conversion of energy from renewable and non-renewable energy sources.		
C106.6	List down the type of road vehicles and their specifications; illustrate various basic parts and transmission system of a road vehicle.		