

**KAVIKULGURU INSTITUTE OF TECHNOLOGY AND  
SCIENCE, RAMTEK**

Sr. No.	Department of Science and Humanities	
	<b>First Semester</b>	
1	BESI-1T	Applied Mathematics – I
2	BESI-2T	Engineering Physics
3	BESI-2P	Engineering Physics Practical
4	BESI-3T	Engineering Chemistry
5	BESI-3P	Engineering Chemistry Practical
6	BESI-4T	Basic Electrical Engineering
7	BESI-5T	Basics of Civil Engineering
8	BESI-6T	Engineering Graphics-I
9	BESI-7P	Communication Skills Practical
10	BESI-8P	Computational Skills
	<b>Second Semester</b>	
1	BESII-1T	Applied Mathematics – II
2	BESII-2T	Materials Chemistry Practical
3	BESII-2T	Advanced Physics
4	BESII-2P	Advanced Physics Practical
5	BESII-3T	Materials Chemistry
6	BESII-4T	Engineering Mechanics
7	BESII-5T	Advanced Electrical Engineering
8	BESII-4T	Engineering Mechanics
9	BESII-4P	Engineering Mechanics
10	BESII-6T	Engineering Graphics-II
11	BESII-7T	Workshop
12	BESII-8T	Ethical Sciences

## Department of Science and Humanities

The department of Science and Humanities has framed the following Course Outcomes in consultation with concerned stakeholder and corresponding committees.

<b>BE First Semester</b>	
	<b>Applied Mathematics – I (BESI-1T)</b>
CO101.1	Student will be able to understand successive differentiation process and to find the limiting value of the function with indeterminate form. Also able to
CO101.2	Student will be able to understand the concept of function of several variables
CO101.3	Student will be able to apply concept of matrices to solve system of linear
CO101.4	Student will be able to understand and apply the various techniques to solve the
CO101.5	Student will be able to develop an ability to solve higher order linear and non-
CO101.6	Student will be able to understand the concept of complex numbers and its
	<b>Engineering Physics (BESI-2T)</b>
CO102.1	At the end of course, the students will be able to understand the limitations of Classical Physics and the evolution of modern physics Planck's
CO102.2	At the end of course, the students will be able to apply the concept of the matter wave to understand the concept of wave packet, Heisenbergs uncertainty principle, Wave function and application of Schrodinger's time independent equation as one dimensional wave equation to trapped particle, concept of tunneling.
CO102.3	At the end of course, the students will be able to understand the basic of crystallography, cubic unit cell. Recognize various planes in a crystal
CO102.4	At the end of course, the students will be able to understand the band theory and its application to classification of solids, concept of Fermi level, Intrinsic and extrinsic semiconductors, PN-junction, diodes and transistors and
	<b>Engineering Physics Practical (BESI-2P)</b>
CO102.1	Data interpretation by using graphs, estimation of % error to arrive at the desires outcome of the experiment.
CO102.2	Determine band gap energy value by various methods to gain an insight into the
CO102.3	To study electrical behavior of the p-n junction diode and BJT to understand their
CO102.4	To study Hall effect in semiconductor to understand its significance.

	<b>Engineering Chemistry (BESI-3T)</b>
CO103.1	Domestic and industrial waste water analysis and treatment methods to minimize
CO103.2	Scientific approach on theories of corrosion and designing the methods to control
CO103.3	Modern tools for the manufacture of quality materials and applications of them
CO103.4	Principles and applications of green chemistry and designing the different
	<b>Engineering Chemistry Practical (BESI-3P)</b>
CO103.1	To determine chemical parameters such as hardness and alkalinity.
CO103.2	To estimate the metals like iron and copper in solution of unknown concentration
CO103.3	Determination of capacity of different resins and their applications.
CO103.4	Principles and applications P <sup>H</sup> metry Titrations
	<b>Basic Electrical Engineering (BESI-4T)</b>
CO104.1	To understand the basic knowledge of electrical quantities such as current,
CO104.2	To understand the analysis of basic DC and AC circuit use to solve the complex
CO104.3	To understand the basic properties of magnet and its application to magnetic
CO104.4	To understand AC circuit and its application in global world and to solve
CO104.5	To understand the principal, operation and application of transformer.
CO104.6	To understand the different test on transformer and its equivalent circuit.
	<b>Basics of Civil Engineering (BESI-5T)</b>
CO105.1	To know the scope of Civil Engineering and role of engineers in the
CO105.2	Ability to understand functions of different structures and planning of building
CO105.3	To understand the types of construction, building material and types of soil to
CO105.4	To know various types of maps, surveying instruments, surveying methods, GIS
CO105.5	To know the importance of conventional and modern methods of purification of water and to understand waste management collection methods of liquid,
CO105.6	To ability to know different instruments and equipment used in construction field
	<b>Engineering Graphics-I (BESI-6T)</b>
CO106.1	The students will be able to understand basics knowledge of engineering graphics such as instruments, lines, dimensioning techniques, scales, sheet layout and different methods of Engineering curves. They will also understand

CO106.2	The students will be able to understand projections of different types of planes
CO106.3	The students will be able to understand conversion of pictorial view into orthographic views also they will be able to draw orthographic views
CO106.4	The students will be able to understand the concept of isometric projection and view also they will be able to draw isometric projection and view
	<b>Communication Skills Practical (BESI-7P)</b>
CO107.1	Enhanced in four skills- LSRW
CO107.2	Build the confidence of the students.
CO107.3	Build-up the confidence to face group discussions
CO107.4	Prepared effectively for various job interviews.
CO107.5	Enhanced vocabulary for facing competitive examinations.
CO107.6	Improved body language while Communicating.
	<b>Computational Skills (BESI-8P)</b>
CO108.1	Students can understand structure of Computer, its assembly, use of each I/O device and ports, use of System Software like: Windows Operating System, Linux, and basics Concepts of C Language.
CO108.2	Students can understand and able to write the programs on control structures (like
CO108.3	Students can understand and able to write the programs on pointers, strings and functions.
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CO108.3	Students can understand and able to write the programs on pointers, strings and functions.

<b>BE Second Semester</b>	
	<b>Applied Mathematics – II ( BESII-1T)</b>
CO201.1	Student will be able to evaluate improper integral by Beta/Gamma function and
CO201.2	Student will be able to trace different types of curves and find its length, area,
CO201.3	Student will be able to understand the concept of double and triple integration and their application in finding mass, area and center of gravity in Cartesian
CO201.4	Student will be able to understand the concept of Dot and Cross product of multi-vectors and vector differentiation of scalar and vector point function and
CO201.5	Student will be able to understand the concept of vector integration and use the
CO201.6	Student will be able to analyze and interpret the data in mathematical form.
	<b>Advanced Physics (BESII-2T)</b>
CO202.1	At the end of course, the students will be able to understand the dual nature of light by studying principle and working of Lasers and the phenomenon
CO202.2	At the end of course, the students will be able to understand the effect of electric
CO202.3	At the end of course, the students will be able to understand working principle of modern devices like Cyclotron, Mass-septrograph and CRO as an application
CO202.4	At the end of course, the students will be able to understand the working principle of optical fiber and its characteristics and their applications.
	<b>Advanced Physics Practical (BESII-2P)</b>
CO202.1	Data interpretation by using graphs, estimation of % error to arrive at the desires
CO202.2	Understand the concept to thin film interference of light and Diffraction.
CO202.3	Understand the working of CRO and its applications.
CO202.4	Able to understand the propagation of light through fiber and determination of
	<b>Materials Chemistry (BESII-3T)</b>
CO203.1	Calorific value determination , analysis of coal, renewable and non-renewable
CO203.2	Extraction and manufacture of liquid fuels, combustion calculations and principle
CO203.3	Mechanism of lubrication, properties, selections and applications of different
CO203.4	Properties and applications of different materials and applications of nano

	<b>Materials Chemistry (BESII-3P)</b>
CO203.1	To determine chemical parameter of lubricating oils viz. acid value
CO203.2	To determine physical properties of lubricating oils viz. variation of viscosity
CO203.3	Determination of CV and Moisture of solid fuels by using standard apparatus.
CO203.4	Determination of flash and fire points of oils by using standard apparatus.
	<b>Engineering Mechanics (BESII-4T)</b>
CO204.1	An ability to construct free-body diagrams and to calculate the reactions
CO204.2	An understanding of the analysis of distributed loads.
CO204.3	Knowledge of internal forces and moments in members
CO204.4	An ability to calculate centroid and moments of inertia.
CO204.5	Knowledge of kinetic analyses and energy and momentum methods for particles
CO204.6	Knowledge of kinetic analyses and energy and momentum methods for rigid
	<b>Engineering Mechanics (BESII-4P)</b>
CO204.1	Student will able to understand nature of forces in various members.
CO204.2	Student will able to know how to verify law of polygon of forces.
CO204.3	Student will able to understand working principle of various machines.
	<b>Advanced Electrical Engineering (BESII-5T)</b>
CO205.1	Students will learn types of power generation of both conventional and non-
CO205.2	Able to understand different voltage levels at different stages through single line
CO205.3	Learn basic protection system of power system
CO205.4	Study about Dc machines and 3phase ,1 phase induction motors briefly
CO205.5	Able to understand types of tariffs and calculate domestic load and charges
CO205.4	Study about illumination, different lamps, working principles and calculate no. of
	<b>Engineering Graphics-II (BESII-6T)</b>
CO206.1	The students will be able to understand various commands in AutoCAD and also
CO206.2	The students will be able to understand concept of section of solids and will be
CO206..3	The students will be able to understand the concept of development of lateral surfaces of different types of solids and will be able to draw development
CO206.4	The students will be able to understand the concept of missing view and will be
	<b>Workshop (BESII-7)</b>
CO207.1	Students will be able to understand applications of hand tools and power tools.
CO207.2	Students will be able to understand the operations of machine tools.
CO207.3	Students will be able to select the appropriate tools required for specific

CO207.4	Students will be able to comprehend the safety measures required to be taken
	<b>Ethical Sciences (BESII-8T)</b>
CO208.1	Culture and Civilization, Applied Humanities and Social Engineering, Socio
CO208.2	Industrial Psychology, Industrial Sociology, Fatigue, Selection and Training,
CO208.3	Sustainable Development, Professional Ethics, Leadership in Industry
CO208.4	Indian Constitution, Federal System, Fundamental Rights, Directive Principles,
CO208.5	Industrial Democracy, Works Organization, Power, Authority and Status, Formal