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॥ विद्यां विद्या संजीवनी ॥

NAAC Accredited

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HOLY-WOOD ACADEMY'S

SANJEEVAN

ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

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○ Approved By AICTE, New Delhi ○ Recognized by Govt. of Maharashtra & DTE
○ Permanent Affiliation by Dr. Babasaheb Ambedkar Technological University, Raigad

Department of Basic Sciences and Humanities

Course Outcomes of both Semesters 2022-23

Physics Group

Class F.Y. B. Tech		Semester I	
Sr. No	CO. No	Subject Name Engineering Mathematics- I	Code BTBS 101
1	CO1	to develop an ability to find rank, inverse of matrix	
2	CO2	to find n-th derivatives of functions	
3	CO3	to study the concept of partial differentiation and Euler's theorem	
4	CO4	to apply the concept of partial differentiation to find the percentage error, series expansions and maxima and minima of functions	
5	CO5	to evaluate double and triple integrals and study application of multiple integrals	
6	CO6	to check the ordinary, absolute and conditional convergence of the infinite series	

Class F.Y. B. Tech		Semester I	
Sr. No	CO. No	Subject Name Engineering Physics	Code BTBS 102
1	CO1	Explain the production of waves	
2	CO2	To learn the term like interference, polarizations and explain the optical phenomenon in the lasers and fiber optics	
3	CO3	Explain the terms in modern physics for quantum theory	
4	CO4	To explain crystal structure	
5	CO5	Explain the magnetic, Superconducting and semiconducting materials and study of classification of materials	

Class F.Y. B. Tech		Semester I	
Sr. No	CO. No	Subject Name Engineering Graphics	Code BTBS 103
1	CO1	To make use of drawing instruments effectively for drawing and dimensioning.	
2	CO2	To understand the conventions and methods of engineering drawing.	

3	CO3	To know the concept of projections of points, lines, planes, solids and section of solids.
4	CO4	To understand the Construction isometric and orthographic views of given objects.

Class F.Y. B. Tech		Semester I
Sr. No	CO. No	Subject Name Communication Skills, Code-BTMH 104
1	CO1	Develop knowledge, skills, and judgment around human communication that facilitate their ability to work collaboratively with others.
2	CO2	Utilize verbal and nonverbal cues to convey messages clearly and confidently.
3	CO3 1.	Identify and apply different communication styles in various contexts.
4	CO4	Understand basic grammar principles and be able to synthesis and transform sentences.
5	CO5 2.	Enhance critical thinking and problem-solving abilities through communication.

Class F.Y. B. Tech		Semester I
Sr. No	CO. No	Subject Name Energy and Environment Engn. Code-BTMH 105
1	CO1	Identify conventional, non-conventional energy sources.
2	CO2	Know and discuss power consuming and power developing devices for effective utilization and power consumption
3	CO3	Identify various sources of air, water pollution and its effects.
4	CO4	Know and discuss noise, soil, thermal pollution and Identify solid, biomedical and hazardous waste.

Class F.Y. B. Tech		Semester I
Sr. No	CO. No	Subject Name Basic Civil and Mechanical Engineering Code-BTMH 106
1	CO1	Introduction to civil engineering, basic engineering properties, material properties
2	CO2	Introduction to building component's and planning, ventilation and plumbing and sanitizations
3	CO3	Principles of survey distance and angular measurement, plotting of area, plane table surveying, leveling and various contours
4	CO4	Introduction to mechanical engineering, various laws of thermodynamic and its application in Engineering, Introduction to IC Engines and power plants

5	CO5	Introduction to design machine mechanisms, engineering materials and introducing various machine tools.
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Class F.Y. B. Tech		Semester I
Sr. No	CO. No	Subject Name Engineering Physics Lab , Code-BTMH 107 L
1	CO1	Demonstrate an ability to make physical measurements and understand the limits of precision in measurements.
2	CO2	Demonstrate the ability to construct a variety of working electrical circuits.
3	CO3	Demonstrate the ability to measure properties of a variety of electrical and optical systems.
4	CO4	Demonstrate the ability to use experimental statistics to determine the precision of a series of measurements.
5	CO5	To explain P-N junction diode characteristic

Class F.Y. B. Tech		Semester I
Sr. No	CO. No	Subject Name Engineering Graphics Lab, Code-BTMH 108 L
1	CO1	To draw various geometric shapes with given specifications
2	CO2	To utilize various drawing conventions
3	CO3	To solve problems of projections (Lines , Planes , Solids , Orthographic , Isometric)
4	CO4	To construct three dimensional views from given two dimensional views

Class F.Y. B. Tech		Semester I
Sr. No	CO. No	Subject Name Communication Skills Lab, Code-BTMH 109 L
1	CO1 3.	Identify and apply different communication styles in various contexts.
2	CO2	Write CVs, letters for job application, complaints and emails.
3	CO3	Prepare technical reports and short essays.
4	CO4	Learn phonetic symbols and use correct sound, stress and intonation.
5	CO5	Learn basic do's and don'ts of an interview.
6	CO6	Show enhances communication ability in English.

Chemistry Group

Class F.Y. B. Tech		Semester II	
Sr. No	CO. No	Subject Name Engineering Mathematics- II	Code BTBS 201
1	CO1	To use properties of complex numbers in problems related to electric circuits, mechanical, telecommunication systems etc.	
2	CO2	To develop an acquaintance with the methods of finding the solutions of differential equations of first order and first degree.	
3	CO3	To develop an relationship with the methods of finding solutions of linear differential equations with constant coefficients.	
4	CO4	To develop knowledge of the fourier series expansion of different periodic functions so as to use them in harmonic analysis.	
5	CO5	To develop knowledge of vector differentiation and vector integration.	

Class F.Y. B. Tech		Semester II	
Sr. No	CO. No	Subject Name Engineering Chemistry 202	Code BTBS
1	CO1	To check water quality parameters and advanced water purification techniques.	
2	CO2	To explain basic chemistry behind corrosion of metals and various corrosion prevention methods.	
3	CO3	To explain qualities of good fuel such as calorific value and its determination.	
4	CO4	To explain basics of instrumental methods of chemical analysis and their applications.	
5	CO5	To get the synthesis and applications of advanced materials and metallic materials.	

Class F.Y. B. Tech		Semester II	
Sr. No	CO. No	Subject Name Engineering Mechanics	Code BTBS 203
1	CO1	To know and apply fundamental laws of engineering Mechanics	
2	CO2	To know and apply Conditions of static equilibrium to analyze given force system	
3	CO3	To compute Centre of gravity and Moment of Inertia of plane surface	
4	CO4	To compute the motion characteristics of a body/ particles for a Rectilinear and Curvilinear	
5	CO5	To know and discuss relation between force and motion	

		characteristics
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Class F.Y. B. Tech		Semester II
Sr. No	CO. No	Subject Name Computer Programming in C Code BTBS 204
1	CO1	Gain a broad perspective about the uses of computer in engineering industry and C programming.
2	CO2	Develop the basic concept of algorithm, algorithmic thinking and flowchart
3	CO3	Apply the use of C Programming language to implement various algorithms and develops the basic concepts and terminology of programming in general
4	CO4	Use the more advanced features of the C language
5	CO5	Identify tasks in which the numerical techniques learned are applicable and apply them to write programs and hence use computers effectively to solve the task.

Class F.Y. B. Tech		Semester II
Sr. No	CO. No	Subject Name Workshop Practices Code BTBS 205
1	CO1	To build the understanding of the complexity of the industrial job, along with time and skills requirements of the job
2	CO2	To learn manufacturing processes and production technology
3	CO3	To learn and practice fitting shop technology
4	CO4	To learn and practice welding technology
5	CO5	To learn and practice smithy and sheet metal technology

Class F.Y. B. Tech		Semester II
Sr. No	CO. No	Subject Name Basic Electrical and Electronics Engineering Code BTBS 206
1	CO1	To understand the basic terminology/definitions of electrical and electronics engineering
2	CO2	To apply the knowledge of theorems/laws to analyze the simple circuits
3	CO3	To use the principles of electromagnetic induction in electrical applications
4	CO4	To construct and analyze simple AC circuits.
5	CO5	To select the electrical machines for different applications.

Class F.Y. B. Tech		Semester II
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Sr. No	CO. No	Subject Name Engineering Chemistry Lab	Code BTBS 208 L
1	CO1	To calculate water quality parameters.	
2	CO2	To explain basics of instrumental methods	
3	CO3	To calculate rate of corrosion	
4	CO4	To prepare basic resin materials.	
5	CO5	To calculate percentage of elements present in an alloy	

Sr. No	CO. No	Subject Name Engineering Mechanics Lab	Code BTBS 209 L
1	CO1	Assignmnet on Polygon law of coplanar forces, Centroid of irregular shaped bodies and Bell crank lever	
2	CO2	Problem Solution on Support reaction for beam, on beam reaction by graphics statics method, and Simple / compound pendulum.	
3	CO3	Experiments on Inclined plane (to determine coefficient of friction), Collision of elastic bodies (Law of conservation of momentum) and Moment of Inertia of fly wheel.	
4	CO4	Verification of law of Machine using Screw jack, Worm and Worm Wheel and Single and Double Gear Crab	
5	CO5	Application of Spreadsheet Program for conceptslike law of moments innovative experiment relevant to Engineering Mechanics	

Program Outcomes (PO)

Engineering Graduate will be able to –

PO1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specific needs with appropriate consideration for the public health and safety, and the cultural, social, and environmental considerations.

PO4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Specific Outcomes (PSOs)

PSO1. Apply basic knowledge related to the discipline to solve engineering/ societal problems.

PSO2. Recognize and adapt to technical developments and to engage in lifelong learning and develop consciousness for professional, social, legal and ethical responsibilities.

PSO3. Excellent adaptability to the changing industrial and real world requirement