



Shri Ambabai Talim Sanstha's SANJAY BHOKARE GROUP OF INSTITUTES, MIRAJ.

Tilak Nagar, Sangli-Miraj Road Miraj - 416 410 Dist. Sangli

Faculty of Engineering

An Autonomous Institute



Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Approved By AICTE New Delhi, Recognized by Government of Maharashtra and DTE Mumbai.

Department of First Year Engineering

Programme Name	B. Tech	Class	First Year
Course Name	Engineering Chemistry	Course Code	24FY101T
Prepared By	/Prof. A. A. Aiwale		
Pre-Requisites knowledge of course	Student should have knowledge of Basic Chemistry		

Course Outcomes

At the end of the course student should be able to:

CO1	Students should be able to understand and explain the basic concepts of Water Treatment and capable to explain softening processes and water characteristics.
CO2	Students should be able to explain analysis, Calorific value of fuel and explain Lubricants, its properties and industrial importance.
CO3	Calculate the quality parameters of advanced materials and efficiency of fuel from given data.
CO4	Student should be able to understand and explain various instrumental methods of Analysis.
CO5	Student should be able to understand and explain properties and uses of Engineering materials such as Cement, Rubber etc.

Programme Name	B. Tech	Class	First Year
Course Name	Engineering Mathematics - I	Course Code	24FY102T
Prepared By	Prof. S. M. Landage		
Pre-Requisites knowledge of course	Student should have knowledge about basic concepts in Mathematics.		

Course Outcomes

At the end of the course student should be able to:

CO1	Apply the matrix technique (Linear algebra) to find solutions of system of linear equations arising in many engineering problems.
CO2	Apply the matrix technique to find Eigen values, Eigen vectors and inverse by Cayley Hamilton theorem.
CO3	Demonstrate the concept partial derivatives and their applications to Maxima/ Minima, series expansion of multi valued functions.
CO4	Compute Jacobian of functions of several variables and their applications to engineering problems
CO5	Use the knowledge of Complex number in engineering problems.



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Programme Name	B. Tech	Class	First Year
Course Name	Engineering Mechanics	Course Code	24FY103T
Prepared By	/Prof. S. A. Chougule		
Pre-Requisites knowledge of course	Student should have knowledge of motions, gravity and energy transformation		

Course Outcomes

At the end of the course student should be able to:

CO1	Carry out resolution and composition of forces for concurrent and no concurrent force system and find unknown force acting on body
CO2	Draw free body diagram and analyze the body in static equilibrium
CO3	Determine the centroid and Moment of Inertia for composite sections.
CO4	Analyze the bodies in Dynamic equilibrium and solve the kinematics problems
CO5	To apply basic dynamics concepts - the Work-Energy principle, Impulse-Momentum principle

Programme Name	B. Tech	Class	First Year
Course Name	Computer Programming using C Language	Course Code	24FY104T
Prepared By	Dr. Mrs. A. A. Miraje		
Pre-Requisites knowledge of course	Student should have knowledge of Computers and softwares		

Course Outcomes

At the end of the course student should be able to:

CO1	Understand terminology in C language and various operators.
CO2	Control the sequence of a program & repeat instructions using branching and looping Statements
CO3	Comprehend concepts like arrays, strings in C programming language
CO4	Implement user defined functions for dividing big program into sub programs and later to combine into one for ease of debug and test the program.
CO5	Use pointers efficiently to support dynamic memory allocation to reduce program execution time and define structures for placing data of different types using single name useful for database creation



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Programme Name	B. Tech	Class	First Year
Course Name	Communication Skills	Course Code	24FY105T
Prepared By	/Prof. R. R. Kalal		
Pre-Requisites knowledge of course	Student should have knowledge about grammar correctly during Speaking and Writing situations especially in context with Presentations, Public Speaking, Report writing and Business Correspondence		
Course Outcomes			
At the end of the course student should be able to:			
CO1	Illustrate the concept of communication and its process.		
CO2	Apply the knowledge the Effective communication.		
CO3	To exhibit oratorical skills by giving oral presentations.		
CO4	Compose formal letters, emails and job application with accurate grammar and vocabulary		
CO5	Utilize the knowledge of Listening skills and reading skills/ Improve listening, note-taking and observational skills		

Programme Name	B. Tech	Class	First Year
Course Name	Engineering Physics	Course Code	24FY106T
Prepared By	Prof. S. M. Jadhav		
Pre-Requisites knowledge of course	Student should have knowledge about terms in Physics		
Course Outcomes			
At the end of the course student should be able to:			
CO1	Apply the basics of interference, Diffraction and polarization in Engineering applications		
CO2	Students are able to describe the light propagation in optical fibre, use of Laser and optical fibre in Engineering applications		
CO3	Identify types of crystal, planes in crystal and describe structure of solid		
CO4	Classify magnetic materials, Analyse and interpret the BH curve to understand the magnetic properties of materials and applications of superconductor		
CO5	Interpret and demonstrate motion of charged particle in electromagnetic field, Basic concept of Quantum mechanics		



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Programme Name	B. Tech	Class	First Year
Course Name	Engineering Mathematics - II	Course Code	24FY107T
Prepared By	Prof. S. M. Landage		
Pre-Requisites knowledge of course	Student should have knowledge of advance concepts in Mathematics		

Course Outcomes

At the end of the course student should be able to:

CO1	Solve first order and first degree ordinary differential equations and apply them in engineering problems.
CO2	Solve higher order differential equations and apply them in engineering problems.
CO3	Demonstrate the concept of vector differentiation and interpret the physical and geometrical meaning of gradient, divergence & curl in various engineering streams.
CO4	Identify and sketch of curves in various coordinate system and understand concept of reduction formulae.
CO5	Evaluate multiple integrals and their applications to area and volume.

Programme Name	B. Tech	Class	First Year
Course Name	Engineering Graphics	Course Code	24FY108T
Prepared By	Prof. S. G. Mane		
Pre-Requisites knowledge of course	Student should have knowledge of Engineering drawings		

Course Outcomes

At the end of the course student should be able to:

CO1	Understand the basics of engineering graphics and its applications.
CO2	Visualize and project Orthographic drawing of simple machine components and projections of points by appropriate method.
CO3	Demonstrate and projections of lines and planes by appropriate method.
CO4	Demonstrate and projections of Solids by appropriate method
CO5	Understand basic commands of CAD and use of Auto CAD 3D Modelling Workspace for practicing lines, solids, lettering and dimensioning in Engineering Graphics.



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Programme Name	B. Tech	Class	First Year
Course Name	Basic Electrical & Electronics Engineering	Course Code	24FY109T
Prepared By	Prof. M. M. Kamble		
Pre-Requisites knowledge of course	Student should have knowledge of Charge, current, voltage, resistance Ohm's Law Conductors and insulators		

Course Outcomes

At the end of the course student should be able to:

CO1	Apply fundamental concepts and circuit laws to solve simple DC and AC circuits
CO2	Interpret the construction and working of different types of electrical machines
CO3	Analyse building blocks of basic dc power supply
CO4	Outline the principle of BJT and its configuration. and digital number system with basic gates
CO5	Apply the knowledge of measuring instruments in electronic instrumentation system

Programme Name	B. Tech	Class	First Year
Course Name	Basic Civil & Mechanical Engineering	Course Code	24FY110T
Prepared By	Dr. Mrs. S. N. Hublikar, /Prof. G. P. Gavane		
Pre-Requisites knowledge of course	Student should have knowledge of Basic mechanics (force, motion, energy) and Units and conversions (SI units, derived units)		

Course Outcomes

At the end of the course student should be able to:

CO1	Understand Principles of Planning, Basic Engineering properties and uses of materials.
CO2	Understand the Building Components and suitability of the foundation.
CO3	Understand surveying methods of linear, angular measurement and levelling
CO4	Explain fundamental concepts of thermal engineering and internal combustion engines.
CO5	Identify and describe basic machine elements, mechanisms, and manufacturing processes.



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Programme Name	B. Tech	Class	First Year
Course Name	Energy and Environment	Course Code	24FY111T
Prepared By	/Prof. P. P. Aiwale		
Pre-Requisites knowledge of course	Student should have knowledge of terms of Energy and environment		

Course Outcomes

At the end of the course student should be able to:

CO1	Know and understand about components and segments of environment ecosystem and its types.
CO2	Understand the pollutants such as sources and effects.
CO3	Understand and to explain types of energies such as wind energy, solar energy, Hydro energy etc.
CO4	Understand and explain various types of air pollution, their effects and control measures.
CO5	Know the various types of water pollution, sources, waste water treatment, effects of water.

Programme Name	B. Tech	Class	First Year
Course Name	Yoga Education	Course Code	24FY112T
Prepared By	/Prof. G. P. Mali		
Pre-Requisites knowledge of course	Student should have knowledge of Health awareness.		

Course Outcomes

At the end of the course student should be able to:

CO1	Learn Message of Vedas and Upanishads.
CO2	Learn Four Streams of Yoga.
CO3	Learn Shaddarshanas or the SIX systems of Indian Philosophy.
CO4	Understand Life and message of spiritual masters and Indian Culture.
CO5	Understand Anatomy and Physiology, Yoga and Exercise Physiology.



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Programme Name	B. Tech	Class	First Year
Course Name	Integrated Personality Development	Course Code	24FY113T
Prepared By	Prof. S. G. Mane		
Pre-Requisites knowledge of course	Basic understanding of personal strengths and weaknesses and Willingness to engage in self-reflection and self-assessment.		

Course Outcomes

At the end of the course student should be able to:

CO1	To provide students with soft skills that complement their hard skills, making them more marketable when entering the workforce.
CO2	To enhance awareness of India's glory and global values, and to create considerate citizens who strive for the betterment of their family, college, workforce, and nation.
CO3	To inspire students to strive for a higher sense of character by learning from role models who have lived principled, disciplined, and value-based lives.
CO4	To encourage students to build stronger familial bonds and contribute positively to their communities through service and ethical living.