



Savitribai Phule Shikshan Prasarak Mandal's
N B NAVALE SINHGAD COLLEGE OF ENGINEERING

(Approved by AICTE & Affiliated to Solapur University, Solapur)

Opp. Solapur University, Solapur – Pune National Highway, Kegaon, Solapur. 413255

First Year B. Tech.

SEMESTER-I

NAME OF COURSE:		ENGINEERING PHYSICS	
COURSE CODE:	BSC-01	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr.SHK

Course Outcomes:

BSC-01.1	Understand the concepts of semiconductors to implement in Engineering field.
BSC-01.2	Analyze the structural properties of elemental solids.
BSC-01.3	Apply concepts of acoustics and ultrasonic in various Engineering instruments.
BSC-01.4	Implement diffraction and polarization phenomenon to design advanced optical instruments.
BSC-01.5	Understand the fundamentals, construction and working of Laser in order to apply this Technology in Engineering fields.
BSC-01.6	Understand the basics of optical fiber and Nanoscience to implement in Engineering.



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First Year B. Tech.

NAME OF COURSE:		ENGINEERING CHEMISTRY	
COURSE CODE:	BSC-02	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.AAK

Course Outcomes:

BSC-02.1	Analyse the water quality and interpret techniques for water purification.
BSC-02.2	Describe lubrication and properties of lubricants, select proper lubricant for specific machine.
BSC-02.3	Explain mechanism of the corrosion, select proper preventive methods of corrosion.
BSC-02.4	Recognize the fuel quality and understand the scope of alternate energy sources.
BSC-02.5	Interpret the chemical synthesis, properties of various polymers and their applications.
BSC-02.6	Describe various types of energy storage systems with their applications.



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First Year B. Tech.

NAME OF COURSE:		ENGINEERING MATHEMATICS - I	
COURSE CODE:	BSC-03	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr.VVK

Course Outcomes:

BSC-03.1	Compute higher order derivative of standard functions.
BSC-03.2	Determine the power series expansion of a given function and evaluate limits.
BSC-03.3	Use matrices techniques for solving system simultaneous linear equations , eigen values and eigen vectors of the matrix.
BSC-03.4	Solve multivariable derivative of given functions.
BSC-03.5	Use multivariable derivative to estimate maxima and minima of multivariable function.
BSC-03.6	Compute velocity vector, gradient, divergence, curl and applications.



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First Year B. Tech.

NAME OF COURSE:		BASICS OF CIVIL AND MECHANICAL ENGINEERING	
COURSE CODE:	ESC-01	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.SVN

Course Outcomes:

ESC-01.1	Describe the role of civil engineer in the development of the society and Relationship of civil engineering with other branches of engineering and technology.
ESC-01.2	Explain various elements of buildings, concepts of Green Buildings, transportation engineering, Remotesensing Techniques, GIS &GPS..
ESC-01.3	Explain various concepts and application of GIS ,GPS and Remotesensing Techniques..
ESC-01.4	Determine heat and work quantum during different thermodynamic processes and Identify power absorbing/producing devices.
ESC-01.5	Identify suitable power transmission system for different mechanical applications
ESC-01.6	Explain various machining/joining processes implemented in everyday life.



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First Year B. Tech

NAME OF COURSE:		Basic Electrical and Electronics Engineering	
COURSE CODE:	ESC-02	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.SSH

Course Outcomes:

ESC-02 .1	Apply the various simplification methods to analyze dc circuits.
ESC-02 .2	Use the concept of electromagnetism to calculate the parameters of magnetic circuits and single-phase transformers.
ESC-02 .3	Apply knowledge of ac fundamentals to analyze ac circuits.
ESC-02.4	Demonstrate the working, characteristics, and applications of diode.
ESC-02 .5	Explain the working, characteristics, and applications of BJT
ESC-02 .6	Perform arithmetic operations on a digital number system.



First Year B. Tech

NAME OF COURSE:		ENGINEERING MECHANICS	
COURSE CODE:	ESC-03	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.SBT

Course Outcomes:

ESC-03.1	Apply fundamentals of Engineering Mechanics for analyzing effects of a system of forces acting on a rigid body.
ESC-03.2	Analyze various types of statically determinate pin jointed trusses.
ESC-03.3	Apply knowledge of Kinematics of rigid body motion to solve problems of bodies in motion.
ESC-03.4	Apply knowledge of Kinetics of rigid body motion to solve problems of bodies in motion.
ESC-03.5	Apply Work Energy methods and conservation of momentum principle for analyzing linear and rotational motion.
ESC-03.6	Locate centroid and center of Gravity and calculate moment of Inertia of plane lamina.



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NAME OF COURSE:		COMUNICATION SKILS	
COURSE CODE:	AEC-01	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.RDD

Course Outcomes:

AEC-01.1	Understand English grammar and apply it in communication.
AEC-01.2	Prepare for competitive exams with focus on verbal ability.
AEC-01.3	Develop oral communication skills.
AEC-01.4	Enhance reading and comprehension skills.
AEC-01.5	Prepare for professional written communication.
AEC-01.6	Develop and enhance communication skills.



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NAME OF COURSE:		SPORTS & YOGA / NCC / NSS/UBA (Liberal Learning Course-I)	
COURSE CODE:	CC-01	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.Jhadhav

Course Outcomes:

CC-01.1	Understand the basic principles and practices of Physical Education & Sports.
CC-01.2	Understand and apply the concepts of Physical Education, Sports and Yoga with its various implications.
CC-01.3	Develop professionalism among students to conduct, organize & officiate, Physical Education and Sports events at schools, colleges and community.
CC-01.4	Understand and apply the knowledge of NSS/NCC in the social fabric system.
CC-01.5	Become free thinker, open communicator, knowledgeable citizens and respectable individuals.



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NAME OF COURSE:		WORKSHOP PRACTICE	
COURSE CODE:	SEC-01	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.SVN

Course Outcomes:

SEC-01.1	Identify various hardware and software components of a computer and compare between them.
SEC-01.2	Assemble a desktop from components supplied and Setup a working desktop system using a Raspberry Pi board.
SEC-01.3	Identify and use various electronic components and instruments and Develop basic electronic circuits on breadboards.
SEC-01.4	Demonstrate the use of an Arduino board using basic circuits.
SEC-01.5	Prepare different shaped metal work piece joints from the given metal blanks by selecting different tools and machines, Perform different types of welding of metal components.
SEC-01.6	Select different engineering tools required to perform, fitting, machining, welding and joining processes.



First Year B. Tech

NAME OF COURSE:		ENGINEERING MATHEMATICS -II	
COURSE CODE:	BS-04	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Dr.VVK

Course Outcomes:

BS-04.1	Find the solution of first order & first degree ordinary differential equations with its applications
BS-04.2	Determine the convergence of sequences and infinite series.
BS-04.3	Determine the differentiation of functions of complex variable that are used in various techniques dealing engineering problems.
BS-04.4	Solve improper integrals using mathematical tools.
BS-04.5	Sketch cartesian, polar and parametric curves.
BS-04.6	Solve multiple integrals and use them to find area of curve and mass of lamina.

**First Year B. Tech**

NAME OF COURSE:		ENGINEERING GRAPHICS AND CAD	
COURSE CODE:	ESC-04	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	Prof.SMC

Course Outcomes:

ESC-04.1	Draw the projections of oblique lines and planes
ESC-04.2	Explain views of solids and their sectional surfaces.
ESC-04.3	Visualize and draw the orthogonal views
ESC-04.4	Draft the machine components and related parts by using commercial drafting software.

**First Year B. Tech**

NAME OF COURSE:		DATA ANALYSIS AND PROGRAMMING SKILLS	
COURSE CODE:	SEC-02	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	

Course Outcomes:

SEC-02.1	Design the flowchart and algorithms for the given programming problem
SEC-02.2	Implement/Write Pseudo code using C Program by appropriately selecting the control and loop structure
SEC-02.3	Implement/Write Pseudo code using C Program using Arrays
SEC-02.4	Implement/Write Pseudo code using C Program using Functions and pointers
SEC-02.5	Implement/Write Pseudo code using C Program using Structures and Unions



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NAME OF COURSE:		PROFESSIONAL PERSONALITY DEVELOPMENT	
COURSE CODE:	CO	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	

Course Outcomes

CO.1	Understand the concept of personality development and do the SWOC analysis.
CO.2	Participate effectively in group discussion.
CO.3	Perform effectively in personal interview.
CO.4	Prepare good quality presentation and deliver it effectively.
CO.5	Inculcate soft skills for professional success.
CO.6	Develop right approach for personal and professional success.



NAME OF COURSE:		Introduction to Indian Knowledge System	
COURSE CODE:	IKS-01	ACADEMIC YEAR :	2023-24
CLASS :	F.Y. B.Tech	NAME OF SUBJECT TEACHER:	

Course Outcomes:

IKS-01.1	Creating awareness amongst the youths about the true history and rich culture of the country;
IKS-01.2	Understanding the scientific value of the traditional knowledge of Bhārata;
IKS-01.3	Promoting the youths to do research in the various fields of Bhāratīya knowledge system;
IKS-01.4	Converting the Bhāratīya wisdom into the applied aspect of the modern scientific paradigm;
IKS-01.5	Adding career, professional and business opportunities to the youths.