



Holy-wood Academy, Kolhapur's

SANJEEVAN ENGINEERING AND TECHNOLOGY INSTITUTE

Sanjeevan Knowledge City, Somwar Peth- Injole, Panhala, Tal. Panhala, Dist. Kolhapur Pin- 416 201 (MS.)

Phone : Dept.: 0231 - 2686613, PBX : 0231 - 2686600, Fax : 0231 - 2686629

■ Approved By AICTE - New Delhi ■ Recognized by Govt. of Maharashtra & DTE ■ Affiliated to Shivaji University, Kolhapur

Website : www.seti.edu.in Email : principal@seti.edu.in / office@seti.edu.in

EN 6315

DEPARTMENT OF CIVIL ENGINEERING

SE PART- I	Course 1	Department
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	BUILDING Construction & Materials	Course Code: 63342
Class	S.E.	Know the building Materials.
Course Outcomes	1	Describe properties and suitability of various building materials.
	2	State the different building components.
	3	Demonstrate different bonds in brick masonry.
	4	Produce drawings of different building components.
	5	Explain different types of roof coverings.
	6	Describe different types of flooring.

SE PART- I	Course 1	Department
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	FLUID MECH I	Course Code:
Class	S.E.	
Course Outcomes	1	Know the processes and science of fluids.
	2	Study the basic properties of fluids and their behavior under application of various force systems.
	3	Discuss the basic concepts and principles in fluid statics, fluid kinematics and fluid dynamics with their applications in fluid flow problems.
	4	Identify and obtain values of fluid properties and relationship between them.
	5	Recognize the principles of continuity, momentum and energy as applied to fluid in motion.
	6	Recognize the principles written in form of mathematical equations and to apply these equations to analyze problems by making proper assumptions and learn systematic engineering methods to solve practical fluid mechanics problems.

Name of Program	Civil Engineering	Program Code
Name of Course	Environmental Studies	Course Code
Class	S.E.	
Course Outcomes	1	Understand importance of environment
	2	Know key issues about environment
	3	Understands the reasons for environment degradation
	4	Know aspects about improvement methods
	5	Know initiatives taken by the world bodies to restrict and reduce degradation

SE PART- I	Course 4	Department
Name of Program	Civil Engineering	Program Code - 631519110
Name of Course	Numerical Methods	Course Code
Class	S. E.	
Course Outcomes	1	Apply the techniques, skills, knowledge of mathematics, science and modern engineering tools necessary for engineering practices.
	2	Develop programs in C C++, where applications will be drawn from different fields of civil engineering so to motivate individual interests of students and to equip them with basic computing tool for civil engineering applications.

SE PART- I	Course 5	Department
Name of Program	Civil Engineering	Program Code - 631519110
Name of Course	Strength of material	Course Code
Class	S. E.	
Course Outcomes	1	Calculates the response of elastic body for external actions.
	2	List the different engineering properties and behavior of the materials
	3	Computes the design forces.
	4	Analyze the stress, strain and deformation of elastic bodies under external actions

NOTE: Include all the courses mentioned in syllabus structure
E.G. practical, seminar, mini oriject, project, PSD etc.

SE PART- I	Course 5	Department
Name of Program	Civil Engineering	Program Code - 631519110
Name of Course	Engineering Mathematics III	Course Code
Class	S. E.	
Course Outcomes	1	Apply basic mathematical tools for solving engineering problems.
	2	Develop logical and critical thinking and the ability to reflect critically upon their work.
	3	Provide skills in vector calculus and linear differential equations which would enable them to devise engineering solutions for given situations they may encounter in their profession.
	4	Cover the topics in probability and statistics with emphasize on the application of probability theories and statistical techniques to practical engineering problems.
	5	Deploy skills effectively in the solution of problems, principally in the area of engineering

SE PART- II	Course 1	Department
Name of Program	CIVIL ENGINEERING	Program Code:631519110
Name of Course	FLUID MECHANICS-II	Course Code:63347
Class	SE CIVIL	
Course Outcomes	1	To provide students with basic knowledge of fluid properties and utilizing principles developed in fluid mechanics.
	2	To develop the principle and equation for pressure flow and momentum analysis
	3	Provide the students with the analytical knowledge of pressure and velocity distribution in open channel in order to solve problems
	4	To illustrate and develop the equations and design principles for open channel flows, including sanitary and storm sewer design and flood control hydraulics

SE PART- II	Course 2	Department
Name of Program	CIVIL ENGINEERING	Program Code:631519110
Name of Course	SURVEYING 2	Course Code:43587
Class	SE CIVIL	
Course Outcomes	1	Apply the principles of tacheometry in distance measurements , also advanced instruments
	2	Formulate triangulation station , flight planning and control points
	3	Explain basis of field astronomy, different coordinate system , importance of field astronomy in surveying
	4	Set out horizontal curves by linear and angular measurements
	5	Apply knowledge of survey to field

SE PART- II	Course 3	Department
Name of Program	CIVIL	Program Code:631519110
Name of Course	Structural Mechanics	Course Code:63344
Class	SE	
Course Outcomes	1	Explain the behavior and quantification methods of stress and strain in structural members, such as shaft and beams, under different external loads
	2	Enhance the confident level of students to understand the concept of eccentrically loaded structures
	3	Analyze behavior of axially loaded members by using different formulae.
	4	Analyze statically determinate structure for deflection using various methods

SE PART- II	Course 4	Department
Name of Program	CIVIL	Program Code:631519110
Name of Course	Concrete Technology	Course Code:63346
Class	SE	
Course Outcomes	1	Identify the functional role of ingredients of concrete and apply this knowledge to mix design philosophy
	2	Apply fundamental knowledge in the fresh and hardened properties of concrete
	3	Evaluate the effect of the environment on service life performance, properties and failure modes of structural concrete and demonstrate techniques of measuring the Non-Destructive Testing of concrete structure measuring the Non-Destructive Testing of concrete structure
	4	Design a concrete mix which fulfills the required properties for fresh and hardened concrete

SE PART- II	Course 5	Department:
Name of Program	CIVIL	Program Code:631519110
Name of Course	Building Design & Drawing	Course Code
Class	SE	
Course Outcomes	1	Know principles of building planning.
	2	Describe Building By-Laws and regulations.
	3	To plan and draw residential building considering principle of planning and Building By-Laws and regulations.
	4	Explain techniques of maintenance, repair and rehabilitation of structure.
	5	Draw the working drawing of foundation detail, plumbing and electrification of building.
	6	Illustrate the concept of ventilation, air conditioning and thermal insulation.
	7	Describe different types of building finishes.

TE PART- I	Course 1	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Engineering Geology	Course Code: 66876
Class		
Course Outcomes	1	Identify and classify the different types of minerals and rocks with their civil Engineering significance
	2	Interpret the different types of geological structures with emphasis on civil engineering aspects
	3	Identify the phenomenon of earthquake and landslides along with their civil engineering mitigation
	4	Acquire knowledge about groundwater and building stones.
	5	Investigate the suitability of site for construction of dams, reservoirs, bridges and tunnels etc.

TE PART- I	Course 2	Department:CIVIL
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	Environmental Engineering-I	Course Code: 66237
Class	T.E.	
Course Outcomes	1	Describe the various sources of water with respect to quality and quantity of water.
	2	Describe and design the various water treatment units.
	3	Illustrate the special water treatments and sequencing of treatment for various qualities of surface &ground water.
	4	Design the various components related to transmission and distribution of water.
	5	Summarize the different water supply appurtenances.
	6	Explain the principles of green building.

TE PART- I	Course 3	Department:CIVIL
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	Transportation Engineering I	Course Code:
Class	T.E.	
Course Outcomes	1	Design features such as super(elevation sight distance section of road in cutting and filling
	2	Design flexible and rigid pavement as per IRC.
	3	Carryout quality control for WBM, BBM, and concrete pavements.
	4	Design and plan airport, runways terminals buildings, hangers and aprons.
	5	Plan different methods of tunnelling in soft and hard rocks
	6	Plan and layout for docks and ports.

TE PART- I	Course 4	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Building Planning and Design	Course Code:66240
Class	T.E.	
Course Outcomes	1	Student will be able to explain space design for passage between walls, service access, stair, ramps,and elevators
	2	Student will be able to draw public building using principal of planning and prepare plan for corporation submission as per building byelaws and regulation required for construction in corporation area
	3	Student will be able to explain building drawing at various stages like first floor, second floor, terrace plan and demonstrate about plumbing system, air conditioning system, electrification system, ventilation
	4	Student will be able to explain and draw perspective drawings, parallel perspective and angular perspective, introduction to the nature of architecture and interior designing

TE PART- I	Course 5	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	GEOTECHNICAL ENGINEERING-I	Course Code:66238
Class	TE	
Course Outcomes	1	Understand the index properties of soil.
	2	Characterize the soil based on size, shape, index properties plasticity.
	3	Understand the concept of total stress, effective stress pore water pressure in soil.
	4	Understand the process of compaction and consolidation
	5	Understand the shear strength of soil
	6	Determine the earth pressure on retaining structures
	7	Perform different laboratory tests to determine index & engineering properties of soil

NOTE: Include all the courses mentioned in syllabus structure
E.G. practical,seminar,mini oriject, project, PSD etc.

TE PART- II	Course 1	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Theory of Structure	Course Code:66873
Class	TE	
Course Outcomes	1	Know the concept of determinacy and indeterminacy.
	2	Apply appropriate solution techniques to the problem.
	3	Analyze indeterminate structures by using different methods.
	4	Interpret the output of different methods
	5	Aware of the limitations of the methods of solution and their outcomes.

TE PART- II	Course 2	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Engineering Management	Course Code:66875
Class	T.E. Civil	
Course Outcomes	1	Understand the importance of management in Construction
	2	Apply the Quantitative Techniques in practice
	3	Understand and apply Techniques of Material Management
	4	Use the concept of Engineering Economy
	5	Understand the importance of legal aspects in construction
	6	know the advance techniques used in Management

TE PART- II	Course 3	Department:CIVIL
Name of Program	CIVIL ENGINEERING	Program Code:631519110
Name of Course	GEOTECHNICAL ENGINEERING-II	Course Code:66874
Class	SE CIVIL	
Course Outcomes	1	Know different soil/rock strata and use of this data for interpretation of bearing capacity
	2	Understand the importance and basics of foundation engineering in the civil engineering projects.
	3	Understand the classical theories of load bearing capacity and settlement of foundations.
	4	Understand the geotechnical aspects of shallow and deep foundations
	5	Understand the concepts of the stability of slopes and study various methods of evaluating the stability of slopes.
	6	Understand the various concepts of modern foundation techniques.

TE PART- II	Course 5	Department:CIVIL
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	Engineering Geology	Course Code: 66876
Class	TE	
Course Outcomes	1	Identify and classify the different types of minerals and rocks with their civil Engineering significance
	2	Interpret the different types of geological structures with emphasis on civil engineering aspects
	3	Identify the phenomenon of earthquake and landslides along with their civil engineering mitigation
	4	Acquire knowledge about groundwater and building stones.
	5	Investigate the suitability of site for construction of dams, reservoirs, bridges and tunnels etc.

TE PART- II	Course 5	Department
Name of Program	Civil Engineering	Program Code
Name of Course	Environmental Engineering-II	Course Code
Class	TE	
Course Outcomes	1	Explain sources, characteristics and methods of wastewater collection.
	2	Design the primary and secondary wastewater treatment units.
	3	Design low cost wastewater treatment units.
	4	Apply the knowhow of effluent standards for wastewater disposal as per norms.
	5	Explain the necessity and importance of solid waste management.
	6	Describe air pollution, its effect and controlling techniques.
	7	Summarize different legal aspects related to environment protection for sustainable development

BE PART- I	Course 1	Department:CIVIL
Name of Program		Program Code:631519110
Name of Course	Design of concrete Structures-I	Course Code:67558
Class	B.E.	
Course Outcomes	1	List the essential elements necessary to analyze Concrete structures.
	2	Student will be able to convey the concepts of structural design procedure
	3	Student will be able to Design the individual members and hence building.

BE PART- I	Course 2	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Earthquake Engineering	Course Code:67559
Class	BE	
Course Outcomes	1	prepare mathematical modeling of structure.
	2	design earthquake resistant structure.
	3	know the concept of modern techniques.

BE PART- I	Course 3	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Project Management and Construction Equipments	Course Code:67561
Class	B.E. Civil	
Course Outcomes	1	Understand the importance of Project Management tools.
	2	Plan and Schedule the Project by using CPM, PERT and MSP.
	3	Understand the working of various construction equipments.
	4	Know the importance of Safety and Risk Management in Construction.
	5	

BE PART- I	Course 4	Department:CIVIL
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	Advanced Engineering Geology	Course Code: 67566
Class	B.E. Civil	
Course Outcomes	1	Understand the stratigraphic sequence of India.
	2	Understand and apply the knowledge of tectonic activities in Deccan traps.
	3	Acquire and apply knowledge of the preliminary geological investigations for civil engineering projects.
	4	Study the behavior of subsurface water and acquire knowledge of natural resources and environmental impact of civil engineering structures.
	5	Develop skills to apply geophysical methods for geological investigation of civil engineering sites.

BE PART- I	Course 5	Department:CIVIL
Name of Program		Program Code: 631519110
Name of Course	Advanced foundation engineering	Course Code
Class		
Course Outcomes	1	Identify a suitable foundation system for a structure.
	2	Evaluate the importance of raft foundation and principles of design for buildings and tower structures.
	3	Analyse and design pile foundations.
	4	Examine and Discuss various machine foundations.
	5	Analyse and design Sheet piles and cofferdams.

NOTE: Include all the courses mentioned in syllabus structure
E.G. practical, seminar, mini oriject, project, PSD etc.

BE PART- I	Course 6	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Quantity Surveying and Valuation	Course Code: 47902
Class	B.E.	
Course Outcomes	1	Calculate quantity required for various items of construction by various Methods
	2	Draft specifications and Contract Document.
	3	Describe about process of tendering
	4	Evaluate value of any building.

BE PART- II	Course 1	Department:CIVIL
Name of Program	B. E. CIVIL	Program Code:631519110
Name of Course	Advance Construction Techniues	Course Code:67764
Class	B. E.	
Course Outcomes	1	Know about various advance construction in construction projects and allied theory
	2	Classify and compare various method/ Techniques related to construction
	3	Solve/ Identify Onsite critical Problem
	4	Analyse various Construction Methods
	5	Suggest appropriate techniques for varios construction critical Problem

BE PART- II	Course 2	Department:CIVIL
Name of Program		Program Code:631519110
Name of Course	Design of concrete Structures-II	Course Code:67748
Class	B.E.	
Course Outcomes	1	Student will be able to design Sections subjected to torsion
	2	Student will be able to design Continuous beams/ slabs
	3	Student will be able to design Water tanks resting on ground
	4	Student will be able to design Prestressed concrete sections

BE PART- II	Course 3	Department:CIVIL
Name of Program	Civil Engineering	Program Code:631519110
Name of Course	Structural Design and Drawing-II	Course Code:67765
Class	B.E.(Civil)	
Course Outcomes	1	Translate the ideas into workable plans
	2	Classify the components
	3	Design the units and hence the structure as a whole
	4	Draft the details for execution
	5	To read and understand the supplied drawing for execution on site

BE PART- II	Course 4	Department:CIVIL
Name of Program	CIVIL	Program Code:631519110
Name of Course	Structural design of foundation and retaining structure	Course Code:67753
Class	BE	
Course Outcomes	1	Design and detailing of combine footing; rectangular, trapezoidal and strap beam combine footings
	2	Design and detailing of pile caps for three, four and six pile groups
	3	Design and detailing of mat or raft foundation
	4	Lateral stability analysis of well foundations and design elements of well foundations
	5	Design and detailing of cantilever type of retaining wall for various types of backfill conditions

BE PART- II	Course 5	Department:CIVIL
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	Industrial Waste Treatment	Course Code: 67763
Class		
Course Outcomes	1	Describe the various sources of wastewater, stream and effluent standards, miscellaneous methods of dissolved solids removal, sludge disposal.
	2	Describe the various waste volume and strength reduction methods.
	3	State the self purification of streams.
	4	Explain different types of waste treatment & their selections.
	5	Produce drawings of different manufacturing processes in major industries as well as treatment flow sheets.
	6	Summarize different legal aspects related to environment protection.

BE PART- II	Course 5	Department:CIVIL
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	WRE 2	Course Code: 67749
Class	BE CIVIL	
Course Outcomes	1	Explain the basis regarding site selection criteria for reservoir as well as dams .Design earth dam by slip circle mehod , to study various failures and seepage control of earth dam
	2	Demonstrate the various forces acting on gravity dam with magnitude and direction , stability calculations regarding gravity dam.
	3	Discuss various types of spillway andspilway gates methods of dissipation of energy
	4	Discuss diversion headwork and Blings and Khosla seepage theories , Kennedy and Lacey's silt theories and cross drainage work
	5	Show mending phenomenon , types of river training workandits design . Describe Hydro power generation process and layout of it with its components

BE PART- II	Course 5	Department:CIVIL
Name of Program	Civil Engineering	Program Code: 631519110
Name of Course	Transportation Engineering II	Course Code: 67750
Class	BE CIVIL	
Course Outcomes	1	Able to understand importance of town planning and its past trends.
	2	Able to understand with different types of urban strategies and management for sustainable urban growth
	3	Decide the selection of a bridge structures; list the factors affecting, design of a various parameters of bridge structures
	4	Able to understand railway engineering design parameters and its importance.