2.6.1 Programme outcomes, Programme specific outcomes and course outcomes for all Programme offered by the institution

INDEX

SANJEEVAN ENGINEERING & TECHNOLOGY INTITUTE PANHALA

DEPARMENT OF AUTOMOBILE ENGINEERING

PROGRAMME OUTCOMES

The curriculum and syllabus for B.E. Automobile engineering program conform to outcome based teaching learning process at Sanjeevan Engineering and Technology Institute affiliated to Shivaji University, Kolhapur.

PO'S No.	Program Outcomes
PO1	An ability to apply knowledge of mathematics and engineering science.
PO2	An ability to identify, develop and conduct experiments, as well as analyze and interpret data.
PO3	An ability to design a system component, or process to meet desired needs within realistic constraints.
PO4	An ability to examine complex problems by conducting the investigations.
PO5	An ability to plan and execute the projects and manage financial aspects.
PO6	To understand role play of Automobile engineering solutions in society with contempory issues.
PO7	An ability to communicate and present effectively in both verbal and written form.
PO8	An ability to perform and create sustainable working environment.
PO9	Recognition of need for self-improvement and an ability to engage in lifelong learning
PO10	An ability to understand professional and ethical responsibilities.
PO11	An ability to use the techniques, skills, and modern engineering tools necessary for automobile engineering practice.
PO12	An ability to perform individually as well as team member or team leader.

SANJEEVAN ENGINEERING & TECHNOLOGY INTITUTE PANHALA

DEPARMENT OF AUTOMOBILE ENGINEERING

Program Specific Outcomes (PSO):

1) Apply mathematical and basic science skills to solve automotive design, dynamics and performance problems
2) Make a use of mechanical & automotive equipment for diagnose and maintenance of various automotive system
3) Create awareness in society regarding automotive road safety & emission norms

Holy-Wood Academy's Sanjeevan Engineering and Technology Institute (SETI), Panhala

Name of the Programme	Automobile Engineering	**Name of the Course**	EM-III [63380]
Year	Second Year	**Semester**	III
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Develop abstract, logical and critical thinking and the ability to reflect critically upon their work.		
CO2	Apply probability theories and statistical techniques to practical engineering problems.		
CO3	Devise engineering solutions for given situations in their profession.		
CO4	Formulate a mathematical model of a real life and engineering problem, solve and interpret the solution in real world.		

Name of the Programme	Automobile Engineering	**Name of the Course**	ET[63381]
Year	Second Year	**Semester**	III
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	knowledge about to operate DC motor, DC generator, Three phase motor		
CO2	knowledge about electrical heating process		
CO3	electronics equipments working & its parts		
CO4	knowledge about microprocessor , OP-amp		

Name of the Programme	Automobile Engineering	**Name of the Course**	Fluid Mechanics [63384]
Year	Second Year	**Semester**	III
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	1. Students able to identify various Engineering materials and their properties.		
CO2	2. Students acquire knowledge of Ferrous Alloys and non-Ferrous Alloys.		
CO3	3. Students understand the knowledge of Casting Process and Metal Forming.		
CO4	4. Students understand the knowledge of Casting Process and Metal Forming.		
CO5	5. Students able to identify and study advanced manufacturing processes.		

Name of the Programme	Automobile Engineering	**Name of the Course**	ATD [63382]
Year	Second Year	**Semester**	III
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Understand basic concepts of physics and chemistry behind thermodynamics		
CO2	Understand basic concept of entropy		
CO3	Analyze the problem of available and unavailable energy		
CO4	Identify problems in gas power cycles and resolve it		
CO5	Differentiate between refrigeration and air conditioning		

Name of the Programme	Automobile Engineering	**Name of the Course**	Instrumentation Lab [63385]
Year	Second Year	**Semester**	III
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	To obeseve different microstructures.		
CO2	To verify heat treatment processes and their outcome.		
CO3	To observe cast iron types and its microstructures.		
CO4	To perform etching process.		

Name of the Programme	Automobile Engineering	**Name of the Course**	Workshop-III [63387]
Year	Second Year	**Semester**	III
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	1. To list and define various casting processes.		
CO2	2. To differentiate various operations on lathe machine and perform practical on same		
CO3	3. To discuss and summarize various safety measures for performing job in a workshop.		

Name of the Programme	Automobile Engineering	**Name of the Course**	KOM [63389]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Able to select mechanism as per design requirement to get desired motion		
CO2	Able to analyse velocity and acceleration of given mechanism		
CO3	Able to design cam as per requirement		
CO5	able to analyse various characteristics of governor		

Name of the Programme	Automobile Engineering	**Name of the Course**	CM [63388]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Define basic concept of numerical methods		
CO2	Identify the types of computational method to solve problem.		
CO3	identify mathematical problem and apply it.		
CO5	Help while solving FEA and optimization problem		

Name of the Programme	Automobile Engineering	**Name of the Course**	Fluid Machinery [63391]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Understand working principle of Impulse and Reaction turbine.		
CO2	Understand the concept of Centrifugal pumps and various efficiencies related to it.		
CO3	Understand the concept of centrifugal and Axial compressors.		
CO4	Understand working of Gas Turbines and know its various configurations.		

Name of the Programme	Automobile Engineering	**Name of the Course**	MMT [63390]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	1. Students able to classify the different metal alloys.		
CO2	2. Students acquire knowledge of Select the suitable heat treatment process.		
CO3	3. Students understand Test the metallurgical properties of metals.		
CO4	4. Students able to compare the metals with non-metals.		

Name of the Programme	Automobile Engineering	**Name of the Course**	SOM [63392]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	1. To gain knowledge of different types of stresses, Strains and deformation induced in Mechanical Components due to external loads.		
CO2	2. To study the distribution of various stresses in Mechanical Elements.		
CO3	3. To study the effect of component dimensions and shape on stresses and deformations		

Name of the Programme	Automobile Engineering	**Name of the Course**	C++ [63393]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	To understand the fundamentals of Programming languages.		
CO2	To execute the programme as per requirement.		
CO3	To solve various programmes like addition, subtraction and multiplication etc.		

Name of the Programme	Automobile Engineering	**Name of the Course**	PS-I [63395]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Acquire English as a language for specific purpose.		
CO2	2.Prepare themselves according to the requirements of professional life.		
CO3	3.Improve his personality traits.		

Name of the Programme	Automobile Engineering	**Name of the Course**	Workshop Practice-IV [63394]
Year	Second Year	**Semester**	IV
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	1. To list, define and perform various operations on a lathe machine.		
CO2	2. To study and demonstrate spur gear manufacturing.		
CO3	3. To discuss and summarize various safety measures for performing job in a workshop		

Name of the Programme	Automobile Engineering	**Name of the Course**	ACD [63386]
Year	Second Year	**Semester**	V
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	able to understand BIS Convention of various standard parts		
CO2	able to draw free hand sketches of various parts		
CO3	able to understand and draw assembly and detail drawing		
CO4	able to acquire knowledge of auxiliary and intersection of solid		

Name of the Programme	Automobile Engineering	**Name of the Course**	HP [66257]
Year	Third Year	**Semester**	V
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Explain the different types of chassis frames & its construction, materials & testing methods		
CO2	Summaries the different steering geometry and types of front axle.		
CO3	State the various types of suspension systems & its construction		
CO4	Describe the types of wheels and tyres & its construction		
CO5	5. Identify the different types of braking systems & its construction, advantage disadvantage.		

Name of the Programme	Automobile Engineering	**Name of the Course**	Auto Chassis [66258]
Year	Third Year	**Semester**	V
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Explain the different types of chassis frames & its construction, materials & testing methods		
CO2	Summaries the different steering geometry and types of front axle.		
CO3	State the various types of suspension systems & its construction		
CO4	Describe the types of wheels and tyres & its construction		
CO5	5. Identify the different types of braking systems & its construction, advantage disadvantage.		

Name of the Programme	Automobile Engineering	**Name of the Course**	Metrology & Quality Control [66259]
Year	Third Year	**Semester**	V
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Distinguish various instruments and their characteristics		
CO2	Apply knowledge of instruments to use and interpret the data.		
CO3	Apply knowledge for solving problems on limits, fits and tolerances.		
CO4	Explain the types of control chart to use, depending on given data.		

Name of the Programme	Automobile Engineering	**Name of the Course**	HMT [66260]
Year	Third Year	**Semester**	V
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Define the basic concepts of Heat and Mass Transfer.		
CO2	State and describe mechanism of heat transfer.		
CO3	Analyze the problem of heat transfer and able to find heat transfer rate and intermediate temperatures.		
CO4	Differentiate between heat and mass transfer.		
CO5	Identify problems in heat and resolve it.		
CO6	Describe and Sketch the types of heat exchanger operations.		

Name of the Programme	Automobile Engineering	**Name of the Course**	PS-II [66262]
Year	Third Year	**Semester**	V
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Acquire English as a language for specific purpose.		
CO2	2. Prepare themselves according to the requirements of professional life.		
CO3	3. Possess corporate ethics.		

Name of the Programme	Automobile Engineering	**Name of the Course**	IOEE [66261]
Year	Third Year	**Semester**	V
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	State the concept of business environment and social responsibility		
CO2	Summarize various functions of management like planning, organizing, staffing, leading etc.		
CO3	Explain basic economic terms and different methods for cost accounting analysis.		
CO4	Describe financial management and marketing.		
CO5	Explain production, material management, industrial safety and concept of entrepreneurship.		

Name of the Programme	Automobile Engineering	**Name of the Course**	Vehicle Body Engineering [66901]
Year	Third Year	**Semester**	VI
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Identify the concepts of wind tunnel testing and vehicle body optimization techniques to reduce drag.		
CO2	Explain the concept of car body design, passenger safety, crumple zone and crash testing.		
CO3	Demonstrate the various types of bus body construction, seating layout, regulations and comfort.		
CO4	Correlate the various heavy vehicle bodies, driver's visibility and cabin design.		
CO5	Distinguish the different types of materials and painting techniques for vehicle body.		

Name of the Programme	Automobile Engineering	**Name of the Course**	ICE [66900]
Year	Third Year	**Semester**	VI
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Identify various components of engine		
CO2	Study and Analyze engine cycle and performance.		
CO3	Understand fuel supply system and combustion phenomenon.		
CO4	Understand system like turbocharging, supercharging, MPFI and CRDI , Cooling and lubricating.		

Name of the Programme	Automobile Engineering	**Name of the Course**	AT[66902]
Year	Third Year	**Semester**	VI
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Understand basic working principle of basic elements of automobile transmission system.		
CO2	Explain working of automatic transmission.		
CO3	Draw performance characteristics of various transmission components.		
CO4	Explain working of hydrostatic drive.		
CO5	Elaborate electric drive & its advantage & disadvantage.		

Name of the Programme	Automobile Engineering	**Name of the Course**	MD [66903]
Year	Third Year	**Semester**	VI
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Able to explain aesthetic and ergonomics to design machine component		
CO2	Able to design shaft ,key and different types of coupling as per requirement		
CO3	Able to design against static load for specific requirement		
CO4	Able to design different machine component		
CO5	Able to design and select of standard component from manufacturing catalogue .		

Name of the Programme	Automobile Engineering	**Name of the Course**	ARAC[66904]
Year	Third Year	**Semester**	VI
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	To impart fundamental knowledge of refrigeration & air conditioning		
CO2	To study various operating cycles in refrigeration & air conditioning		
CO3	To study various refrigerants used for refrigeration & air conditioning units		
CO4	To study the Psychometric properties of air		
CO5	To understand design procedure of refrigeration & air conditioning systems for specific application		

Name of the Programme	Automobile Engineering	**Name of the Course**	CAD/CAM Lab [66905]
Year	Third Year	**Semester**	VI
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	To understand 2 D drawings		
CO2	To understand part design		
CO3	To draw dress up features and other features regarding to the components.		
CO4	To understand assembly design.		

Name of the Programme	Automobile Engineering	**Name of the Course**	Seminar[66906]
Year	Third Year	**Semester**	VI
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	knowledge about specific technical area.		
CO2	confidence about stage daring & to deliver the seminar content		
CO3	able to improve their proficiency in computer.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	ICED **[67608]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Acquire knowledge and solve problem related to design for fluctuating load		
CO2	Student will able to select engine as per requirement		
CO3	student will able to design engine component and accessories as per requirement		
CO4	student will able to design valve mechanism and get knowledge about cooling and lubricating system		
CO5	student will able to design and select any type of bearing from manufacturing catalogue		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	VD **[67609]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Define the basic concepts associated with vehicle dynamics such as lumped mass, coordinate systems and dynamic load transfer.		
CO2	Define and describe various parameters influencing the acceleration performance.		
CO3	Classify various breaking systems and design a new braking system according to requirements of specification of a vehicle.		
CO4	Differentiate between low speed cornering and high speed cornering, calculate parameters such as under-steer gradient, yaw velocity and lateral acceleration gain.		
CO5	Discuss various sensors used in automobile and explain new technology in recent automobiles such as ABS, EBD, ESP, Cruise control etc.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	Finite Element Method **[67610]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Understand the need and application of Finite Element Analysis. Formulate and solve problem on Shape function, interpolation function.		
CO2	Formulate, solve and analyze element characteristic matrices for Field problems such as Structural, torsion Field problem using Different Method.		
CO3	Formulate, solve and analyze element characteristic matrices for Field problems such as Thermal Field problem.		
CO4	Analyze and solve the dynamic behaviour of structure using FEM.		
CO5	Formulate and solve the higher order elements and is parametric elements. Interpret the Rules of meshing, result interpretation & verification of FEA results.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	VM **[67858]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	the student shall gain appreciation & understanding various types of maintenance completed at service station		
CO2	shall be able to know procedure required for wheel alignment & wheel balancing		
CO3	student shall gain knowledge of dismantling & assembly of two wheeler single cylinder engine.		
CO4	student shall gain knowledge of CNG & LPG gas kit.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	Transport Management **[67615]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Student will underst and the need of transport management		
CO2	Student will understand the procedure for getting insurance of vehicle after accident.		
CO3	Student will understand the taxation act & various methods of laving.		
CO4	Student will understand the organization of passenger transport & its operation		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	Automotive Industrial Training **[67617]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	knowledge about industry working environment professnalism		
CO2	confidence about stage daring & to deliver the seminar content		
CO3	Able to improve their proficiency in computer.		
CO4	aware about dressing sense.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	ICET **[67616]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Able to Explain ISI codes for engine testing		
CO2	To Conduct different tests on IC engine		
CO3	To Analyze test data for finding various parameters of I.C Engines		
CO4	Able To Explain heat balance sheet		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	Project Phase-I **[67618]**
Year	Final Year	**Semester**	VII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Identify the topic in the advanced areas of Automobile Engineering		
CO2	Review literature to identify gaps and define objectives and scope of the work		
CO3	Apply the ideas in the literature and develop research methodology		
CO4	Develop a model, experimental set-up and or computational techniques necessary		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	AFE **[67789]**
Year	Final Year	**Semester**	VIII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Students will able to explain different types of alternative fuels& their sources.		
CO2	Student will be able to identify modification required for use of alternative fuel in existing engines.		
CO3	Students will understand production methods of different fuels & their storages methods.		
CO4	Students will have knowledge of emission measurements & their regulations		
CO5	Students will able to differentiate of SI & CI engines emissions & their control technologies.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	AE **[67790]**
Year	Final Year	**Semester**	VIII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	1. Define basic concept of Automotive battery		
CO2	2. Identify the basic types of automotive wiring, types of terminals, and wiring diagrams.		
CO3	3. Describe the types, construction and operations of automotive battery along with ratings, performance, maintenance, and testing.		
CO4	4. Identify ignition and lightening accessory-circuit components, and state their functions		
CO5	5. Identify equipments& accessories, sensors and actuators and explain their functions		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	Vehicle Performance **[67792]**
Year	Final Year	**Semester**	VIII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Recognize the importance of Vehicle Performance.		
CO2	Compare automotive clutches, geared transmission.		
CO3	Describe testing procedure of vehicle systems.		
CO4	Identify active and passive safety systems.		
CO5	Explain causes and remedies for noise and vibration.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	ASD **[67791]**
Year	Final Year	**Semester**	VIII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	To list and define various systems in Automobile and their working principles or mechanisms and should be able to explain them		
CO2	To derive the equation required for design purpose should be able to select materials required for designing a system in an automobile.		
CO3	To differentiate various systems in automobile, analyze them and will be able to solve related problems		
CO4	To design a full or partial system in an automobile, if possible optimize it and explain it with valid methods with good communication.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	Energy Engineering **[67797]**
Year	Final Year	**Semester**	VIII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Identify different renewable energy systems.		
CO2	Explain latest trends in automobile sectors.		
CO3	Describe basic energy management terms		
CO4	Define Geothermal and water energy conversions.		

Name of the Programme	**Automobile Engineering**	**Name of the Course**	Project Phase-II [68492]
Year	Final Year	**Semester**	VIII
Course Outcomes			
S. No.	Upon successful completion of this course, the student will be able to:		
CO1	Identify the materials and methods for carrying out experiments/develop a code.		
CO2	Reorganize the procedures with a concern for society, environment and ethics.		
CO3	Analyse, discuss and justify the results/trends and draw valid conclusions.		
CO4	Prepare the report as per recommended format and present the work orally adhering to stipulated time.		

DEPARTMENT OF CIVIL ENGINEERING

PO: Program Outcomes

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

PO2: Identify, formulate, and analyze complex civil engineering problems using first principles of mathematics, natural sciences, and engineering sciences.

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

PO4: 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 to conduct investigations of complex civil engineering problems.

PO5: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex civil engineering activities with an understanding of the limitations

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

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

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

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

PO10: Communicate effectively on complex civil 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: Demonstrate knowledge and understanding of the civil 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: 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

PSO: Program Specific Outcomes (PSOs)

PSO1: Apply technical knowledge to utilize principles, methods, software's and code of practices for structural analysis and design of civil engineering systems.

PSO2: Adopt project management techniques to plan, execute and maintain quality construction projects with competence in modern tool usage for optimum utilization of resources.

PSO3: Deal with construction & maintenance of infrastructural development projects in the diverse fields of civil engineering focusing on global, economic, environmental and societal aspects.

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 masonary.
	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 beha vior 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 assu mptions and learn systematic engineering methods to solve practical fluid mechanics problems.

Name of Program	Civil Engineering	Program Code
Name of Course	**Enviromental Studies**	Course Code
Class	S.E.	
Course Outcomes	1	Underestand importance of environment
	2	Know key issues about environment
	3	Understands the reasons for environment degradation
	4	Know aspects about improvement methods
	5	Know initatives 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 applicationas will be drawn from different fields of civil engineering so to motivate individual interests of students and to equip them with basic computing toold 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 enablethem 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 pro blems, 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 thisknowledge 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 appropiate 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 Laceys silt theories and cross drainage work
	5	Show mendering 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.

Program Outcomes

The Computer Science & Engineering programme graduates will be able to:

PO1	Apply knowledge of computing and mathematics in the modelling and design of computer based systems.
PO2	Analyse a problem, formulate the solution and define the computing requirements for solution.
PO3	Design & develop creative solutionsfor complex computer science problems.
PO4	Perform experiments on complex software development problems and analyse the experimental results, subdivide into smaller tasks with well-defined interfaceand complete within the specified time frame and financial constraints.
PO5	Use the current technologies and modern tools including Free and Open Source Software (FOSS) tools in developing, testing & deploying the software system.
PO6	Propose ideas and solutions, easy to use tool &applications to help larger section of the society using available computing resources.
PO7	Understand the impact of the e-waste management in environmental contexts and applying the core computer science knowledge for sustainable development.
PO8	Apply ethical principles and commit to professional ethics in network security and data processing.
PO9	To work individually or cooperatively, creatively & respectfully in teams & in professional work environmentsto accomplish a common goal.
PO10	Communicate effectively to the colleague/customers/users on technical topics in oral, written as well as in graphical forms.
PO11	Identify, formulate and solve complex software development problems by using software project management principles.
PO12	Develop the capability of self-learning to understand contemporary issues and to get engaged in lifelong learning by acquiring the knowledge of current technological advancements.

ProgramSpecific Outcomes

By the completion of Computer Science& Engineering program the graduate will have following Program specific outcomes:

PSO1: Database Management: Apply the knowledge of Computer science and engineering in design and development of database systems.

PSO2: Computer Network Security: Design and develop cost effective, ethical computer network security solutions in societal contexts.

PSO3: Foundations of Software Development: the ability to grasp the software development lifecycle and methodologies of software systems & software design process. The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, multimedia, web design, big data analytics, and networking.

Name of Program	**Computer Science and Engineering**	**Program Code**	**631524210**
Class	**SE CSE SEM-III**	At the end of the course the students should be able to :	
Name of Course	Discrete Mathematical Structure	Course Code	63525
Course Outcomes	A	Able to apply this knowledge to solve the problems.	
	B	An ability to identify, formulates, and solves the problems.	
	C	Ability to know and to understand various types of Numerical methods	
	D	The knowledge of interpolation is useful in predicting future out comes base on the present knowledge.	
	E	Inculcate the habit of mathematical thinking.	
	F	A complete knowledge on various discrete structures available in literature	

Name of Course	Data Structures	Course Code	63526
Course Outcomes	1	Familiar with basic data structures.	
	2	Discuss and select appropriate data structures in computer applications.	
	3	Implement various data structures.	

Name of Course	Programming Laboratory-I	Course Code	63529
Course Outcomes	1	Recognize basics of programming techniques like writing algorithms, representing flowcharts and learning the basics of programming with the help of C Programming Language.	
	2	Collect the essential knowledge of arrays and pointers.	
	3	Show Function features and its use while writing the programs.	
	4	Outline the Structure, Union and its application in writing complex programs.	
	5	Explain Use of File Handling Concepts and functions related to it.	

Name of Course	Soft Skills	Course Code	62530
Course Outcomes	1	To enhance the communications skills of the students.	
	2	To expose the students to basic skills of team work.	
	3	To inculcate the writing skills necessary for business communications.	

Name of Course	Data Communications	Course Code	63527
Course Outcomes	1	Acquire sound fundamental of data communication through computer networks.	
	2	Distinguish anolog and digital data communication and the technology involved in data communication.	
		Discern digital data transmission methods, channel, channel coding.	
		Comprehend layered architecture of data communication models and different protocols and understand flow control and error control.	
	3	Recognize IEEE standards for wired transmission of digital data in LANs and MANs.	

Holywood Academy's

SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Name of Program	**Computer Science and Engineering**	**Program Code**	**631524210**
Class	**SE CSE SEM-IV**	At the end of the course the students should be able to :	
Name of Course	Computer Organization	Course Code	63533
Course Outcomes	1	Describe Basics of Computer Organization	
	2	Explain Basics of CPU Design	
	3	Discuss & Solve Computer Arithmetic	
	4	Describe Control Design Methods	
	5	Learn & Describe Memory Organization	

Name of Course	Programming Lab-II	Course Code	63536
Course Outcomes	1	Recognize the concepts of object oriented paradigm.	
	2	Discuss the use of the programming constructs of C++.	
	3	Develop applications based on concepts of Discrete Mathematical Structures and Data Structures using Object-Oriented approach.	

Name of Course	Operating System	Course Code	63534
Course Outcomes	1	Master understanding of design issues associated with operating systems.	
	2	Master concepts of memory management including virtual memory.	
	3	Be familiar with protection and security mechanisms	
	4	Be familiar with various types of operating systems including Unix.	
	5	Master various process management concepts including process scheduling, process synchronization, deadlocks & multithreading.	

Name of Course	Software Engg	Course Code	63535
Course Outcomes	1	Understand the basic concepts & principles of software engineering.	
	2	Apply importance of SDLC in their project development work.	
	3	Understandsoftware testing techniques and software quality management.	

Name of Course	Computer Networks	Course Code	63532
Course Outcomes	1	understand the different layers of OSI model & Network layer Routing Algorithms	
	2	analyze the different logical addressing schemas.	
	3	explain the congestion control techniques with QoS.	
	4	understand the basic of socket Interfaces.	
	5	discuss the functionality of an application layer.	
	6	compare the traditional security aspect.	

Name of Course	Automata Theory	Course Code	63531
Course Outcomes	1	Design and analyze finite automata, pushdown automata, Turing machines, formal languages, and grammars	
	2	Prove the basic results of the Theory of Computation	
	3	Be familiar with thinking analytically and intuitively for problem solving situations in related areas of theory in computer science	

Holywood Academy's

SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Name of Program	**Computer Science and Engineering**	**Program Code**	**631524210**
Class	**TE CSE SEM-V**	At the end of the course the students should be able to :	
Name of Course	Object Oriented Modeling and Design	Course Code	66295
Course Outcomes	1	Understand the Object-Oriented Design Process	
	2	Able to study & implement different models.	
	3	Able to modeling usingUML.	
	4	Able to understand flexible & reusable design of software components	

Name of Course	Computer Graphics	Course Code	66293
Course Outcomes	1	Discuss various transformation techniques and projections.	
	2	Understand different algorithms concerned with scanning, filling, windowing and clipping on graphical objects.	
	3	Aware of generation of curves and surfaces.	
	4	Use Open GL and Animation tools for demonstration.	

Name of Course	Programming Lab-III	Course Code	66298
Course Outcomes	1	Express fundamental object oriented concepts of Java.	
	2	Practice Application of Interface, inheritance and packaging in Java.	
	3	Practice exceptions and file handling in java	
	4	Design GUI using AWT and SWING packages in Java along with event handling.	
	5	Develop the network programming skills in Java.	
	6	Design database application using java & open source database.	

Name of Course	Computer Algorithm	Course Code	66296
Course Outcomes	1	Describe the fundamental concepts in designing and analysing computer algorithms.	
	2	Design basic algorithms using methods like Greedy, Divide and Conquer and Dynamic Programming.	
	3	Apply tree, graph traversal and search techniques and backtracking to design efficient algorithm.	
	4	Apply methods of problem reduction for NP hard problems	
	5	Express the computational model and fundamentals of parallel Algorithms	

Name of Course	System Programming	Course Code	66294
Course Outcomes	1	Analyze Language Processor and Language Processing Activities	
	2	Synthesis the Pass I and Pass II structure of Assembler	
	3	Understand Macros and Macro Preprocessor.	
	4	Interpretation of Compilers and Interpreters,YACC parser	
	5	Apply the use of Relocation, Linking and Software Tools	

Name of Course	Network Technologies	Course Code	66297
Course Outcomes	1	Able to understand the different generations of wireless cellular Networks	
	2	Able to analyze design issues of IEEE 802.11 Wireless LAN.	
	3	Able to study architecture and applications of IEEE 802.15 Wireless PAN.	
	4	Able to understand different Wireless Protocol.	
	5	Able to expose the security in Wireless Access Protocol.	
	6	Able to understand Wireless Sensor Architecture and Sensor Devices	

	Holywood Academy's **SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA** DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Name of Program	**Computer Science and Engineering**	**Program Code**	**631524210**
Class	**TE CSE SEM-VI**	At the end of the course the students should be able to :	
Name of Course	**Storage Networks**	Course Code	**66861**
Course Outcomes	1	Recognize the key challenges in information management.	
	2	Discuss about storage system architecture and data protection.	
	3	Discuss about Storage Area Network- concepts, components and protocols.	
	4	Network -Attached Storage - concepts, components, implementation and protocols.	
	5	Explain Architecture of Storage Virtualization.	
	6	Understand Need of Replication, Replication techniques and Storage Security.	

Name of Course	Database Engineering	Course Code	66860
Course Outcomes	1	Design Data model using E-R modeling technique for application development.	
	2	Answer to the advanced & complex SQL queries in real world applications.	
	3	Develop the programming interface to the DBMS server using high level programming language java.	
	4	Implement indexing on data stored in DBMS.	
	5	Use the advanced tools like MySQL Workbench efficiently.	

Name of Course	Information Security	Course Code	66862
Course Outcomes	1	Understand the current technology trends for the implementation and deployment of information security system.	
	2	Acquire knowledge and solve problems related information security services.	
	3	Analyse the challenges in designing information security service.	
	4	Comprehend the various information security service tools and applications.	
	5	Ability design, implement and verify the System Design Process using real time applications.	

Name of Course	Programming Lab - IV	Course Code	66863
Course Outcomes	1	Design, document, code and test small C# console and GUI applications.	
	2	Understanding the basics of dot net framework and features of modern programming language.	
	3	Use the Visual Studio IDE to create and debug application and class library solutions and projects.	

Name of Course	Compiler Construction	Course Code	66858
Course Outcomes	1	Describe various stages of compiler construction.	
	2	Summarize concepts fo Lexical Analysis and apply it for token generation process.	
	3	Demonstrate steps involved in Syntax Analysis with the help of various parsing techniques and analyze the differences in attributed definations for Syntax trees.	
	4	Catalogue and sketch relationship between Intermediate code generation, Code generation and optimization techniques execute on a mathematical expression.	
	5	Critique o symbol table generation method and perform various techniques to generate these symbol tables.	

Name of Course	Operating System-II	Course Code	66859
Course Outcomes	1	Understand basic concept and architecture of UNIX operating system amd write algorithms of buffer cache.	
	2	Learn the concept of i-node and system calls for file system.	
	3	Understand process stages and transitions, process structure, creation and management in UNIX.	
	4	Compare between swapping and demand paging in UNIX, I/O subsystem.	

	Holywood Academy's **SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA** DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Name of Program	**Computer Science and Engineering**	**Program Code**	**631524210**
Class	**BE CSE SEM-VII**	At the end of the course the students should be able to :	
Name of Course	WEB TECHNOLOGIES - I	Course Code	CS7L05
Course Outcomes	1	Understand different Web Technologies.	
	2	Able to Design Front End Web Content.	
	3	Learns Basics of XML & Its related Technologies	
	4	Able to implement different XML Applications with its Technologies.	
	5	Develop Web Applications using Servlets.	
	6	Develop Web Applications using JSP.	

Name of Course	Advanced Database System	Course Code	CS7L03
Course Outcomes	1	Apply the features, implementation techniques and challenges of Parallel Databases	
	2	Analyse advanced databases like Object-Based and Object Relational databases	
	3	Create advanced SQL queries ,functions and procedures	
	4	Discuss different Database Design techniques.	
	5	Design databases for semi-structured data.	

Name of Course	AD HOC WIRELESS NETWORK	Course Code	CS7E04
Course Outcomes	1	Able to apply this knowledge to solve the real time networking problems.	
	2	Ability to know and to understand ad hoc wireless network and cellular network.	
	3	Ability to know and to understand various types of wireless network.	
	4	The knowledge of interpolation is useful in predicting future out comes base on the present knowledge.	
	5	Inculcate the habit of networking thinking.	
	6	A complete knowledge on various wireless network available in literature	

Name of Course	Advanced Computer Architecture	Course Code	CS7C01
Course Outcomes	1	To understand different computer architectures.	
	2	To learn concepts of pipeline architectures and different performance measures.	
	3	To understand memory organizations.	
	4	To understand latest technologies in parallel processing.	
	5	To understand loosely coupled architectures.	

Name of Course	Distributed Systems	Course Code	CSE402
Course Outcomes	1	Explain what a distributed system is, why we should design a system as a distributed system, and what the desired properties of such systems are.	
	2	2. Describe the problems and challenges associated with these principles, and evaluate the effectiveness and shortcomings of their solutions	
	3	3. Implement the algorithms used in distributed system & visualize their working	
	4	4. Explain uses and need of cloud computing and virtualization.	
	5	5. List the services provided by cloud computing and security aspects of cloud.	

	Holywood Academy's **SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA** DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Name of Program	**Computer Science and Engineering**	**Program Code**	**631524210**
Class	**BE CSE SEM-VII**	At the end of the course the students should be able to :	
Name of Course	WEB TECHNOLOGIES - II	Course Code	CS8L05
Course Outcomes	1	Understand different Web Technologies.	
	2	Able to implement client side and server side scripting languages and validation techniques.	
	3	Access & manage Database using Scripting Languages	
	4	Session management using Scripting Languages	
	5	Develop Web Applications using ASP.NET.	
	6	Develop Web Applications using PHP.	

Name of Course	Data Analytic	Course Code	CS8C01
Course Outcomes	1	Understand Decision Support System	
	2	Analyze Mathematical Models For DSS	
	3	Understand Big Data & Hadoop Ecosystem	
	4	Interpretation of Regression and Association Rules.	
	5	Apply Basic Features of R.Apply Basic Features of R.	

Name of Course	Real Time Operating System	Course Code	CS8C03
Course Outcomes	A	To discuss the basics of embedded systems and the interface issues related to it.	
	B	To learn the different techniques on embedded systems	
	C	To discuss the real time models, languages and operating systems	
	D	To analyze real time Applications.	
	E	Design real time embedded systems using the concepts of RTOS.	

Name of Course	Project Management	Course Code	67825
Course Outcomes	1	Understand the basics of project management principles	
	2	Identify the impact of scope, time & cost management.	
	3	Analyze software quality metrics and quality assurance.	
	4	Develop strategies to calculate risk factors involved in IT projects	
	5	Manage the human resource planning in Project.	
	6	Demonstrate competency in the creation of project plans.	

Name of Course	Software Testing Quality and Assurance	Course Code	CS8E04
Course Outcomes	1	Finding key challenges in information management.	
	2	Storage system architecture and data protection.	
	3	Storage Area Network -concepts,components and protocols.	
	4	Network Attached Storasge -concepts, components, implementation and protocols.	
	5	Architecture of Storage Virtualization.	
	6	Need of Backup and Replication, Replication techniques and Storage Security.	

DEPARTMENT OF ELECTRICAL ENGINEERING

Programme Outcomes [PO]:

PO1: Graduates will demonstrate basic knowledge in mathematics, Science & Engineering.

PO2: Graduates will demonstrate an ability to identify, formulate and solve Electrical Engineering problems.

PO3: Graduates will demonstrate ability to Analyze, Calculate & develop solutions to Electrical Engineering problems.

PO4: Graduates will demonstrate an ability to design and conduct experiments on electrical circuits/systems/work setups/projects, etc, as well as to analyze and interpret data.

PO5: Graduates will be familiar with the Skills to use modern engineering tools, software and equipment to identify, formulate, analyze and solve electrical engineering problems.

PO6: Graduates will be broadly educated and will have an understanding of impact of Engineering on Society and demonstrate the awareness of contemporary issues.

PO7: Graduates will have confidence to apply engineering solutions in environmental and societal contexts.

PO8: Graduates will demonstrate the Knowledge and understanding of their professional and ethical responsibility.

PO9: Graduates will demonstrate an ability to function on engineering & science laboratory teams, as well as on multidisciplinary design teams.

PO10: Graduates will be able to communicate effectively in both verbal and written forms.

PO11: Graduates will be able to apply the principles of project management and finance to Electrical Engineering projects.

PO12: Graduates will demonstrate the confidence for self learning, and recognition of the need to engage in lifelong learning.

Program Specific Objectives [PSO] :

PSO 1: Apply the knowledge of electrical fundamentals, circuit design, control engineering, analog & digital electronics to the field of electrical & electronics systems in industry.

PSO 2: Develop technical knowledge, skill, and competence to identify comprehend and solve problems in research and academic related to power system engineering, industrial drives & control.

Holy-wood Academy, Kolhapur's

SANJEEVAN ENGINEERING AND TECHNOLOGY INSTITUTE

Sanjeevan Knowledge City, Somwar Peth, Panhala, Tal. Panhala, Dist. Kolhapur - 416 201.

Phone : 02328 - 235241, 235493 **Fax :** 02328 - 235241 **Mobile :** 9545451966, 9545453831

Website : www.seti.edu.in **Email :** principal@seti.edu.in / office@seti.edu.in / setipanhala@gmail.com

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

DEPARTMENT OF ELECTRICAL ENGINEERING

Course Outcomes of All Subject

SECOND YEAR S.E. Sem 1

SE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Engg. Maths III	Course Code	63368
Class	SE		
Course Outcomes	1	Understand fundamental concets of Differantial eqautions	
	2	ability to solve numericals using different techniques	
	3	ability to apply knowledge of mathematics in field of Electrical engineering	
	4	formulate different kinds of problems in all field of engineering	

SE PART- I	Course 2	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Analog Circuits	Course Code	63370
Class	SE		
Course Outcomes	1	Know the Various semiconductor devices, their symbols & basic function etc.	
	2	Understand Various semiconductor devices, feedback amplifiers, Operational amplifiers & IC 555	
	3	Explain & Draw Working, characteristics of Semiconductor devices, feedback amplifiers, Circuits using Operational amplifiers & IC 555.	
	4	Design feedback amplifiers, Operational amplifiers & IC 555.	

SE PART- I	Course 3	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Electrical Engineering Materials and Energy Conversion	Course Code	63369
Class	SE		
Course Outcomes	1	Acquire knowledge and solve problems related to Conducting materials, Magnetic materials and Dielectric materials	
	2	Summarize of insulating materials and analyze various applications of insulating materials.	
	3	State the principles of electro-mechanical energy conversion and differentiate types of excitation system.	
	4	Analysis of materials for direct Energy conversion devices.	

SE PART- I	Course 4	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Electromagnetic and Electric Circuits	Course Code	63371
Class	SE		
Course Outcomes	1	Understand Basic concepts of field and circuit theory.	
	2	Understand relation between fields and circuits.	
	3	Understand & learn to apply Maxwells Equations	
	4	Apply network Theorems to various electric circuits.	
	5	Develop techniques to analysis circuit in time domain and frequency domain	

SE PART- I	Course 5	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Programming in C	Course Code	63373
Class	SE		
Course Outcomes	1	will learn basics of Programming	
	2	tackle and convert a given problem statement into a flowchart and an algorithm	
	3	develop decision making capability in using appropriate programming construct	
	4	teach a bottom up method of software development using user defined function.	

SE PART- I	Course 6	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Measurements and Instruments	Course Code	63372
Class	SE		
Course Outcomes	1	Learn the basic concepts of measurements and different measuring instruments	
	2	Able to Examine errors in the instruments	
	3	Demonstrate digital and advance instruments	
	4	Evaluate theoretically the performance of CT's and PT's.	
	5	Identify issues in Instrumentation and Measurements	

SE SEM II

SE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	DC Machines and Transformer	Course Code	63374
Class	SE		
Course Outcomes	1	Understand electrical principle, laws, and working of DC machines.	
	2	Analyse the construction and characteristics and application of various type of DC Generators.	
	3	Analyses the construction and characteristics and application of various type of DC Motors and testing of motors according to Indian standard	
	4	Understand electrical principle , laws, and working of 1 phase transformer and losses . And also conduct various test on the transformer.	
	5	Understand electrical principle , laws, and working of 3 phase transformer and losses . and also conduct various test on the transformer	
	6	analyse the transformer and convert 3 phase transformer to multi-phase transformer	

SE PART- II	Course 2	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Power Electronics	Course Code	63375
Class	SE		
Course Outcomes	1	Learn the principles of operation of power electronic converters	
	2	Understand how to design dc-dc power converters	
	3	Introduce the concept of switching losses	
	4	Learn to design a feedback loop for a dc-dc converter	
	5	Understand the principles of operation of soft switching converters	

SE PART- II	Course 3	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Power System I	Course Code	63376
Class	SE		
Course Outcomes	1	To get basic knowledge of Generation of Electric Energy and Power System	
	2	To understand & Explain Overhead Transmission Lines and Underground	
	3	. Calculate & Analyze Characteristics and Performance of Transmission Line.	
	4	Evaluate Economic Aspects of Power Generation as well as behavior of power	

SE PART- II	Course 4	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Network Analysis and Synthesis	Course Code	63377
Class	SE		
Course Outcomes	1	apply the basic concepts for solving varous Electrical networks	
	2	Choose proper method solving the Electrical network invarious conditions	
	3	apply mathematics in analyzing and synthesizing the networks in time and frequency domain	
	4	evaluate the performance of a significant network after analysis	

SE PART- II	Course 5	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	S. E. Electrical II	Course Code	63378
Class	Control Systems I	63378	
Course Outcomes	1	will learn modeling of different physical systems	
	2	Study of different transfer function finding techniques	
	3	Analyzing behavior of systems using Root locus, bode plot, Routh-Hurwitz criteria etc	
	4	Apply of concept state space through varoous forms	

THIRD YEAR T.E.

TE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Digital Electronics & Microcontroller	Course Code	66250
Class	TE		
Course Outcomes	1	understanding fundamental concepts and techniques used in digitalization of electronics	
	2	examine nature of different number systems and its application in digital design	
	3	ability to understand, analyze and design various combinational and sequential circuits	
	4	develop skill to debug & troubleshoot digital circuits.	

TE PART- I	Course 2	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Ac Machines	Course Code	66251
Class	TE		
Course Outcomes	1	impart the knowledge on fundamental of AC rotating machine	
	2	impart the knowledge on constructional details, principle of operation, performance, starter, speed control and braking of 3 phase induction motor.	
	3	To impart the knowledge on constructional details, principle of operation of 3 phase alternator and synchronous motor	
	4	To impart the knowledge on constructional details, principle of operation, type of 1phaseinduction motor and special machine.	

TE PART- I	Course 3	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	POWER SYSTEM II	Course Code	66252
Class	TE	To understands and can draw single line diagram of the power system.	
Course Outcomes	1	Identify model of generators, transformers, lines and cables in the positive, negative and zero sequence systems based on physical models.	
	2	Ability to analyse different types of fault in a power system	
	3	Use of different Technique to evaluate Power Flow in the power system	
	4	To use finite element software to analyze engineering problems of Power system with analysis.	
	5	understand stability analysis of power system.	

TE PART- I	Course 5	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Control Systems II	Course Code	66253
Class	TE		
Course Outcomes	1	distinguish basics of different types of controllers	
	2	Able to design control system design by means of varoius plots	
	3	Analyse different and design differnat systems by means of bode plot	
	4	Able to design control system by state space method	
	5	apply knowledge of mathematics for advancded control systems	

TE PART- I	Course 6	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Signals & systems	Course Code	66254
Class	TE		
Course Outcomes	1	To show the ability to understand the concepts, different types & properties of signals and systems	
	2	To demonstrate the ability to design a expression with the electrical circuit.	
	3	To demonstrate the ability to solve numerical on concepts of signals & systems.	
	4	To ability to participate and try to succeed in competitive examination.	
	5	Utilize standard signals such as sine, ramp, exponential to characterize systems.	

TE PART- I	Course 7	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Software tools for electrical engineers	Course Code	66255
Class	TE		
Course Outcomes	1	Ablity to programm different non linear solutions	
	2	ability to simulate different converters using matlab	
	3	Measure different parameters using labviiew	
	4	design different kinds of control panel	

TE SEM II

TE PART- Ii	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Advanced Electrical Measurements	Course Code	66845
Class	TE		
Course Outcomes	1	The ability to formulate and then analyze the working of any electrical machine using mathematical model under loaded and unloaded conditions.	
	2	The skill to analyze the response of any electrical machine	
	3	The ability to troubleshoot the operation of an electrical machine.	
	4	The ability to select a suitable measuring instrument for a given application.	
	5	The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument.	

TE PART- Ii	Course 2	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Communication engineering	Course Code	66846
Class	TE		
Course Outcomes	1	Explain basics of Transmission systems	
	2	understand the basic concepts of AM radio transmission and reception.	
	3	Learn and apply basic knowledge of modulation	
	4	show ability to anlyze sampling & techiniques	

TE PART- II	Course 3	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Electrical Machine Design	Course Code	66847
Class	TE		
Course Outcomes	1	Acquire knowledge and solve problems related to design of machines	
	2	Compare the design activity of Rotating AC Machines and transformer, on cost, efficiency, operating characteristics basis	
	3	Select the design tools, material etc	
	4	Search for, analysis and synthesis of data and information, with the use of the necessary technology	
	5	The applying knowledge and understanding capabilities will allow at the graduate to approach the problem linked to the design of the electrical machines.	

TE PART- II	Course 4	Department	Electrical
Name of Program		Program Code	631529310
Name of Course	Power Systems III	Course Code	66848
Class	TE		
Course Outcomes	1	Acquire knowledge, explain and solve problems related to different types of Power system stability and control.	
	2	Summarize the methods of improving stability.	
	3	Compare different methods of power system control with steady state analysis and dynamic response of an isolated	
	4	Detect optimal power system operation & Demonstrate power system security.	

TE PART- II	Course 5	Department	Electrical
Name of Program	TE	Program Code	631529310
Name of Course	Electrical Drives	Course Code	66849
Class	TE		
Course Outcomes	1	Understand the working principals of DC motors, Induction Motors & Synchronous Motors	
	2	Understand various types of drives, loads & their characteristics.	
	3	Explain Various speed control methods of AC & DC motors.	
	4	Derive & Explain Various converters used in Electrical Drives	

TE PART- II	Course 6	Department	Electrical
Name of Program	Electrical Workshop	Program Code	631529310
Name of Course	Electrical	Course Code	66850
Class	TE		
Course Outcomes	1	Understand the working principals household appliances	
	2	ability to trobleshoot issues in domestic applicnces	
	3	able to design & fabricate PCB	
	4	get knowledge on substation components	

FINAL YEAR B.E.

BE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Industrial Training	Course Code	67515
Class	BE		
Course Outcomes	1	Ability to determine issues & find out remedies based on it	
	2	ability to work in team & buidup teamspirit in other.	
	3	ability to work in confined time frame with efficiency	
	4	ability for critical decision making	

BE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Econimics for Engineers	Course Code	67516
Class	BE		
Course Outcomes	1	The entrepreneur skills of students get improved in some percentage.	
	2	Student should able to debate on policy making.	
	3	Students will have the confidence to apply engineering solutions in global and societal contexts	
	4	Student should capable to self-education in their engineering profession.	
	5	Students will have an understanding of the impact of engineering on society and demonstrate awareness of contemporary issues	

BE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Advanced Switchgear & Protection	Course Code	67517
Class	BE		
Course Outcomes	1	get knowledge on different Protection Equipments or Power Systems	
	2	apply kwnoledge about applications of Protection equipments	
	3	ability to discuss all kinds of Circuit breakrs	
	4	ability to express concept pf Recovery & restriking	
	5	ability to distinguish between all kinds of relay	

BE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Power Quality & harmonics	Course Code	67518
Class	BE		
Course Outcomes	1	Acquire knowledge to distinguish between the various categories of power quality problems.	
	2	Analyze & Understand the root of the power quality problems in industry and their impact on performance and economics	
	3	Interpretation power quality improvement techniques and will show ability to design filters	
	4	Learn to apply appropriate solution techniques for power quality mitigation based on the type of problem..	

BE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Computer Methods in Power Systems	Course Code	67519
Class	BE		
Course Outcomes	1	Ability to derive different kinds of numerical techniques	
	2	ability to analyze power systems using latest tools of simulation & computational Techniques	
	3	able to draw algorithm for different numerical techniques	
	4	able to use different simulation tools for assesing indices of power systems	

BE PART- I	Course 2	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Elective I- FACTS	Course Code	67520
Class	BE		
Course Outcomes	1	Understand Basic Concepts in FACTS controllers	
	2	Know role of Facts devices in Reactive power compensation	
	3	Analyze and control system parameters using FACTS devices	
	4	Distingush different applications of UPFC & STATCOM	

BE PART- I	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Seminar	Course Code	67524
Class	BE		
Course Outcomes	1	Understand basic international standards & codes through seminar	
	2	Compare different techniques through literature survey	
	3	able to write effectively through paper publication, dessertation etc	
	4	ablity to represent ideas & views through proper ducumenation & Presentations	

BE PART- I	Course 1	Department	Electrical
Name of Program	Project Phase I	Program Code	631529310
Name of Course		Course Code	67525
Class	BE		
Course Outcomes	1	Understand basic international standards & codes through seminar	
	2	Compare different techniques through literature survey	
	3	able to write effectively through paper publication, dessertation etc	
	4	ablity to represent ideas & views through proper ducumenation & Presentations	
	5	Ability to work in team & build team spirit thriugh project.	

BE SEM II

BE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Law for Engineers	Course Code	
Class	BE		
Course Outcomes	1	Create an awareness of legal principles and isssues that impact professional engineers	
	2	Create an awareness of legal principles and isssues that impact professional engineers	
	3	Understand law relating to intellectual property which covers copyright, trademark & Patent	
	4	Knowledge about corporate law, Industrial employment act and National human rights commission.	

BE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	HVDC Systems	Course Code	68527
Class	BE		
Course Outcomes	1	Understand & Identify different HVDC configurations	
	2	Analyze different kinds of HVDC Faults & suggest remidies on it	
	3	Discuss different Converter Configurations through its operations	
	4	Apply solution on harmonics using different konds of filter	
	5	Express different MTDC systems	

BE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Cours	Extra High Voltage AC	Course Code	68528
Class	BE		
Course Outcomes	1	Describe the Engineering aspect and growth of EHVAC Transmission line and explain various power system characteristics	
	2	Calculations of line and ground power system parameters and their properties	
	3	Discriminate voltage gradients of conductor for EHVAC	
	4	Estimate theory of the travelling waves and standing wave	
	5	Estimate theory of the travelling waves and standing wave	
	6	Describe power frequency voltage control and over voltage	
	7	Identify over voltage in EHVAC system.	
	8	Describe power frequency voltage control and over voltage	

BE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Electrical Generation & utilization	Course Code	68529
Class	BE		
Course Outcomes	1	Understand use of Electrical Energy for Industrial Applications	
	2	able to distinguish Different kinds of Power Plants & Its working	
	3	Apply knowledge of Heating for varius applications	
	4	Express Basics of Electrical traction system	
	5	Able to solve problems based of traction	
	6	Understand Basics of Speed control used in traction system	

BE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Elective II High Voltage Engineering	Course Code	68531
Class	BE		
Course Outcomes	1	Graduate will define & explain the concepts of High voltage engineering	
	2	To compare breakdown in materials using breakdown mechanisms	
	3	To compare breakdown in materials using breakdown mechanisms	
	4	differentiate between various high voltage measurement techniques & analyse , interpret the experiments	
	5	Communicate & write effectively related to subject concepts	

BE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Elective II Electrical Maintenance And Energy Audit	Course Code	68533
Class	BE		
Course Outcomes	1	Introduce what is maintenance and types of maintenance	
	2	Introduce maintenance of transformer and maintenance of grid substation.	
	3	Identify general aspects of energy management and energy	
	4	Introduce energy audit methodology & recent	
	5	Identify energy efficiency in electrical utilities.	

BE PART- II	Course 1	Department	Electrical
Name of Program	Electrical	Program Code	631529310
Name of Course	Project Phase II	Course Code	68534
Class	BE		
Course Outcomes	1	Understand basic international standards & codes through seminar	
	2	Compare different techniques through literature survey	
	3	able to write effectively through paper publication, dessertation etc	
	4	ablity to represent ideas & views through proper documenation & Presentations	
	5	Ability to work in team & build team spirit thriugh project.	

Program Outcomes (PO):

PO1: Graduates will be able to apply the knowledge of mathematics, science and engineering fundamentals.

PO2: Graduates will be able to identify, formulate and solve engineering problems.

PO3: Graduates will be able to design and analyze solutions for electronics engineering problems.

PO4: Graduates will be able to design experiments, analysis and interpretation of data and report results of complex engineering problems.

PO5: Graduates will be familiar with modern engineering, IT tools and equipment to analyze electronics engineering problems.

PO6: Graduates will be able to understand the responsibility they owe to protect the public health, safety and welfare of the society by virtue of their professional status as an engineer.

PO7: Graduates will demonstrate appropriate interpretation of engineering solutions in global, societal and environmental contexts.

PO8: Graduates will be able to apply ethical principles and commit to professional ethics and responsibilities.

PO9: Graduates will be able to function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Graduates will be able to communicate effectively in both oral and written communication skills.

PO11: Graduates will be able to apply principles so as to manage projects and finance in multidisciplinary environments.

PO12: Graduates should be capable of self education and understand the value of life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSO):

PSO1: Analyze and simulate diverse problems in the field of communication.

PSO2: Design and analyze a system with applications in signal and image processing.

PSO3: Built, test and evaluate a VLSI and embedded system with real time constraints.

PSO4: Design and implement a system towards automatic control in varied engineering problems.

Holy-wood Academy's

SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

SY PART- I	Course 1	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Engineering Mathematics-III	Course Code	BTBSC301
Class	SY		
Course Outcomes	1	Solve higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits.	
	2	Solve problems related to Fourier transform, Laplace transform and applications to Communication systems and Signal processing.	
	3	Obtain Interpolating polynomials, numerically differentiate and integrate functions, numerical solutions of differential equations using single step and multi-step iterative methods used in modern scientific computing.	
	4	Perform vector differentiation and integration, analyze the vector fields and apply to Electromagnetic fields.	
	5	Analyze conformal mappings, transformations and perform contour integration of complex functions in the study of electrostatics and signal processing.	

SY PART- I	Course 2	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Analog Circuits	Course Code	BTEXC302
Class	SY		
Course Outcomes	1	Understand the characteristics of IC and Op-Amp and identify the internal structure.	
	2	Understand and identify various manufacturing techniques.	
	3	Derive and determine various performances based parameters and their significance for Op-Amp.	
	4	Comply and verify parameters after exciting IC by any stated method.	
	5	Analyze and identify the closed loop stability considerations and I/O limitations.	
	6	Analyze and identify linear and nonlinear applications of Op-Amp.	
	7	Understand and verify results (levels of V & I) with hardware implementation.	
	8	Implement hardwired circuit to test performance and application for what it is being designed.	
	9	Understand and apply the functionalities of PLL.	

SY PART- I	Course 3	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Electronic Devices & Circuits	Course Code	BTEXC303
Class	SY		
Course Outcomes	1	Comply and verify parameters after exciting devices by any stated method.	
	2	Implement circuit and test the performance.	
	3	Analyze small signal model of FET and MOSFET.	
	4	Explain behavior of FET at low frequency.	
	5	Design an adjustable voltage regulator circuits.	

Holy-wood Academy's

SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

SY PART- I	Course 4	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Network Analysis	Course Code	BTEXC304
Class	SY		
Course Outcomes	1	Apply knowledge of mathematics to solve numerical based on network simplification and it will be used to analyze the same.	
	2	Design passive filters and attenuators theoretically and practically. To apply knowledge for design of active filters as well as digital filters and even extend this to advance adaptive filters.	
	3	Identify issues related to transmission of signals, analyze different RLC networks.	
	4	Find technology recognition for the benefit of the society.	

SY PART- I	Course 5	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Digital Logic Design	Course Code	BTEXC305
Class	SY		
Course Outcomes	1	Use the basic logic gates and various reduction techniques of digital logic circuit in detail.	
	2	Design combinational and sequential circuits.	
	3	Design and implement hardware circuit to test performance and application.	
	4	Understand the architecture and use of VHDL for basic operations and Simulate using simulation software.	

Holy-wood Academy's

SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

SY PART- I	Course 6	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Basic Human Rights	Course Code	BTHM3401
Class	SY		
Course Outcomes	1	Simply put, human rights education is all learning that develops the knowledge, skills, and values of human rights.	
	2	Strengthen the respect for human rights and fundamental freedoms.	
	3	Enable all persons to participate effectively in a free society.	
	4	Learn about human rights principles, such as the universality, indivisibility, and interdependence of human rights.	
	5	Learn about regional, national, state, and local law that reinforces international human rights law.	
	6	Learn and know about and being able to use global, regional, national, and local human rights instruments and mechanisms for the protection of human rights.	

SY PART- II	Course 1	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Electrical Machines and Instruments	Course Code	BTESC401
Class	SY		
Course Outcomes	1	The ability to formulate and then analyze the working of any electrical machine using mathematical model under loaded and unloaded conditions.	
	2	The skill to analyze the response of any electrical machine.	
	3	The ability to troubleshoot the operation of an electrical machine.	
	4	The ability to select a suitable measuring instrument for a given application.	
	5	The ability to estimate and correct deviations in measurements due to the influence of the instrument and due to the accuracy of the instrument.	

Holy-wood Academy's

SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

SY PART- II	Course 2	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Analog Communication Engineering	Course Code	BTEXC402
Class	SY		
Course Outcomes	1	Understand and identify the fundamental concepts and various components of analog communication systems.	
	2	Understand the concepts of modulation and demodulation techniques.	
	3	Design circuits to generate modulated and demodulated wave.	
	4	Equip students with various issues related to analog communication such as modulation, demodulation, transmitters and receivers and noise performance.	
	5	Understand the concepts of modulation and demodulation techniques of angle modulation (frequency and phase).	
	6	Explain signal to noise ratio, noise figure and noise temperature for single and cascaded stages in a communication system.	
	7	Develop the ability to compare and contrast the strengths and weaknesses of various communication systems.	

SY PART- II	Course 3	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Microprocessor	Course Code	BTEXC403
Class	SY		
Course Outcomes	1	Learner gains ability to apply knowledge of engineering in designing different case studies.	
	2	Students get ability to conduct experiments based on interfacing of devices to or interfacing to real world applications.	
	3	Students get ability to interface mechanical system to function in multidisciplinary system like in robotics, Automobiles.	
	4	Students can identify and formulate control and monitoring systems using microprocessors.	
	5	Students will design cost effective real time system to serve engineering solution for Global, social and economic context.	

SY PART- II	Course 4	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Signals and Systems	Course Code	BTEXC404
Class	SY		
Course Outcomes	1	Understand mathematical description and representation of continuous and discrete time signals and systems.	
	2	Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system.	
	3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms.	
	4	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain.	
	5	Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event.	

SY PART- II	Course 5	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Numerical Methods and Computer Programming	Course Code	BTBSC405
Class	SY		
Course Outcomes	1	Able to solve algebraic and transcendental equations by using numerical techniques and will be able to compare different numerical techniques used for this purpose and also will be able to choose a proper one as per the requirement of the problem.	
	2	Able to solve a system of linear equations with any number of variables using different direct and iterative numerical techniques.	
	3	Understand the concept of interpolation, finite difference operators and their relations, and can apply different interpolation techniques on equi-spaced or non equi-spaced data values.	
	4	Prepare them to write computer programs for the numerical computational techniques.	
	5	Understand application of the NMCP course in many engineering core subjects like signal processing, digital communication, numerical techniques in electromagnetics etc.	
	6	Understand procedure-oriented and object oriented programming concepts.	
	7	Capable of writing C and C++ programs efficiently.	

Holy-wood Academy's

SANJEEVAN ENGINEERING & TECHNOLOGY INSTITUTE, PANHALA

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

SY PART- II	Course 6	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Product Design Engineering	Course Code	BTID3401
Class	SY		
Course Outcomes	1	Able to Creating Simple Products and Modules	
	2	Able to Document Creation and Knowledge Sharing	
	3	Able to Self and Work Management	
	4	Able to Team Work and Communication	
	5	Able to Managing Health and Safety	
	6	Capable of Data and Information Management	

TE PART- I	Course 1	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Antenna & Wave Propaga.	Course Code	66314
Class	TE		
Course Outcomes	1	Acquire knowledge and solve problems related to: • Basic parameters of antenna • Antenna array • Radio communication link	
	2	Analyze the performance of: • Broadband and Frequency independent antennas • Antenna measurement techniques	
	3	Summarize the different RADAR systems and layers of atmosphere and analyze their effect on travelling electromagnetic wave	
	4	Apply the knowledge of antenna parameters to design micro strip antennas	

TE PART- I	Course 2	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Control System	Course Code	66315
Class	TE		
Course Outcomes	1	Apply knowledge of mathematics, science, and engineering to design, analyze and control the different systems	
	2	Explain time & frequency domain analysis for different control systems	
	3	Demonstrate & compare different control systems.	
	4	Describe state variables	
	5	Design model for control system.	

TE PART- I	Course 3	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Signals & Systems	Course Code	66316
Class	TE		
Course Outcomes	1	To understand about the various type of signals and its different properties.	
	2	To learn types of system and to design suitable system.	
	3	To learn analysis of time domain signal.	
	4	To learn about different transform of signals.	

TE PART- I	Course 4	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Power Electro.	Course Code	66317
Class	TE		
Course Outcomes	1	Understand power electronics DC Drives, devices and its firing circuits.	
	2	Analyze the allied application of Power Electronics.	
	3	Describe the PLC/SCADA and other miscellaneous applications	

TE PART- I	Course 5	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Digital Comm.	Course Code	66318
Class	TE		
Course Outcomes	1	Realize and solve the problems related to random signals and also the related issues like power spectral density.	
	2	Work with the information availability and code the information in different formats.	
	3	Acquire knowledge of different source coding techniques available with their pros and cons.	
	4	Understand the baseband transmission with optical receiver operation and working.	
	5	Describe the channel coding techniques with error handling methods.	

TE PART- I	Course 6	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Simulation LAB	Course Code	66319
Class	TE		
Course Outcomes	1	To use the different commands, functions required for programming in MATLABand its different properties.	
	2	To calculate and perform various operations using MATLABsystem.	
	3	To analyze and simulate the various systems.	

TE PART- II	Course 1	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Digital Signal Processing	Course Code	66916
Class	TE		
Course Outcomes	1	To apply DFT as an analytical tool. and its different properties.	
	2	To analyze LTI Systems using FFT algorithms system.	
	3	To design FIR and IIR systems.	
	4	To implement FIR and IIR Systems.	

TE PART- II	Course 2	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	VLSI Design	Course Code	66917
Class	TE		
Course Outcomes	1	Implement & Demonstrate HDL codes of digital designs using FPGA/ CPLD based technology	
	2	Explain the difference between VHDL and Verilog HDL	
	3	Model combinational circuits like Adder, Subtractor, Decoder, encoder, multiplexer, parity generator, Parity checker, comparator using different styles of modeling in VHDL&/or Verilog and implement in FPGA/ CPLD using suitable EDA tool.	
	4	Construct FSM, Model sequential logic circuits like counter & sequence detector and simulate it for functional verification	
	5	Describe the features & internal architectures of CPLD (XC 9572) & Spartan IIIE FPGA (XC3S 500E).	

TE PART- II	Course 3	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Micropro. &Microcon.	Course Code	66918
Class	TE		
Course Outcomes	1	To understand internal architecture of 8085 microprocessor.	
	2	To interface the memory chips and different peripherals with 8085 processor.	
	3	To understand the internal architecture of 8051 controller.	
	4	To learn about hardware components of 8051.	
	5	To interface the memory chips and different peripherals with 8051.	

TE PART- II	Course 4	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Optical Comm. & Network	Course Code	66919
Class	TE		
Course Outcomes	1	Elaborate the basic optical communication along with the simulation and modeling tools.	
	2	Differentiate the different types of optical fiber structures and light propagating mechanisms.	
	3	Acquire knowledge of signal degradation mechanism in optical fiber.	
	4	Understand the construction of and working of optical sources and detectors.	
	5	Describe the optical receiver operation, WDM and optical network in detail.	

TE PART- II	Course 5	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Industrial Management	Course Code	66920
Class	TE		
Course Outcomes	1	Demonstrate that how a person is get selected in a company, how the performance of employee is evaluated	
	2	Analyse the methods of performance appraisal and find the best out of them.	
	3	Define both marketing and selling concept.	
	4	Understand the techniques used for selling the product.	

TE PART- II	Course 5	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Electronic System Design	Course Code	66921
Class	TE		
Course Outcomes	1	To understand and design an electronics systems by using conventional components, discrete IC's and different sensors.	
	2	Design an instrumentation system for measuring various physical quantities and control the process variable using analog controllers like ON-OFF, Proportional and PID controllers	
	3	To Design microcontroller based systems and demonstrate use of microcontrollers for process automation.	
	4	To implement mini projects based on knowledge of designing of electronics systems.	

BE PART- I	Course 1	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Satellite Comm.	Course Code	67628
Class	BE		
Course Outcomes	1	Understand Orbital aspects involved in satellite communication.	
	2	Understand Power budget calculation.	
	3	Understand Satellite system and services provided.	
	4	Analyze the performance satellite communication system.	

BE PART- I	Course 2	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	EmbeddSystem	Course Code	67629
Class	BE		
Course Outcomes	1	Apply knowledge of PIC and ARM to develop embedded system designs.	
	2	Students will understand the advantages of ARM architecture and can use the same knowledge to build their projects.	
	3	They'll be able to write codes for programs in assembly language for ARM core	
	4	Construct FSM, Model sequential logic circuits like counter & sequence detector and simulate it for functional verification	
	5	Students will learn use of concepts of RTOS in developing software	

BE PART- I	Course 3	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Computer Comm. Networks	Course Code	67630
Class	BE		
Course Outcomes	1	Explain types of networks, network topologies, distinguish between OSI and TCP/IP reference model, guided & unguided transmission media and different networking devices used at physical layer.	
	2	Describe error detection & correction mechanisms and frame formats at data link layer.	
	3	Explain various routing algorithms and congestion control algorithms used at network layer.	
	4	Illustrate different TCP/IP protocols & demonstrate the network Security Mechanisms.	

BE PART- I	Course 4	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	RF & Microwave Engineering	Course Code	67631
Class	BE		
Course Outcomes	1	Explain the different types modes propagation in waveguides	
	2	Select the appropriate component for various applications.	
	3	Measure the various microwave parameters	
	4	Explain the different microwave Hazards	
	5	Demonstrate the application of Microwave Engineering to various field	

BE PART- I	Course 5	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Robotics	Course Code	67632
Class	BE		
Course Outcomes	1	Student can understand basics concept of industrial atomization & Robotic technology	
	2	Students can able to select different sensors, electronics systems for Robot	
	3	Student can develop software for particular robotic applications	
	4	Students will understand robot applications & develop robot for particular applications	

BE PART- II	Course 1	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Video Engg.	Course Code	67816
Class	BE		
Course Outcomes	1	To understand signal transmission and reception in monochrome and color television systems	
	2	Describe and differentiate the working principle of digital TV, HDTV, CCTV, CATV, DTH	
	3	Analyze the working principle of latest displays like LCD, LED and Plasma	
	4	Elaborate concept of video conferencing and videophone.	

BE PART- II	Course 2	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Wireless Mobile Comm.	Course Code	67817
Class	BE		
Course Outcomes	1	Describe basic fundamentals of wireless communication	
	2	Analyze large & small scale radio wave propagation	
	3	Apply multiple access techniques to mobile communication	
	4	Develop mobile network	
	5	Design various propagation model	

BE PART- II	Course 3	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Digital Image Processing	Course Code	67818
Class	BE		
Course Outcomes	1	Classify fundamental steps in image processing and distinguish between different types of images and its properties.	
	2	Formulate solutions to general image processing problems using various transformations	
	3	Apply different image filtering techniques in spatial and frequency domain	
	4	Analyze different types of morphological image processing transformation	
	5	Examine various image segmentation transformations	
	6	Differentiate between various types of redundancies and also various types of image compression models.	

BE PART- II	Course 4	Department	Electronics & Telecomm.
Name of Program	E & TC	Program Code	631537210
Name of Course	Mechatronics	Course Code	67819
Class	BE		
Course Outcomes	1	Student can learn Basic mechanical operations & Processes	
	2	Students can understand & implement actuators according to need	
	3	Student can learn understand PLC , its requirements & development of PLC software	
	4	Students can Design & Develop Electro-mechanical System	

Department of Mechanical Engineering

Program Outcomes (POs):

Graduates will be able to

P1 Apply basic knowledge in mathematics, science and Mechanical Engineering to solve complex engineering problems.

P2 Identify, formulate and solve Mechanical Engineering problems.

P3 Design the solution for complex Mechanical Engineering problems through system component design or processes that meet the specified needs with appropriate considerations for public health, safety, cultural, societal and environmental considerations.

P4 Use research based knowledge and research methods, conduct experiments, interpret and analyze the data and report the result.

P5 Get familiar with modern engineering software tools and equipments to analyze Mechanical Engineering problems.

P6 Understand the impact of Mechanical Engineering on society and demonstrate awareness of contemporary issues.

P7 Apply Mechanical Engineering solutions in global and societal contexts.

P8 Understand their professional and ethical responsibilities.

P9 Work as a leader or a team member for various Mechanical Engineering curricular activities.

P10 Communicate effectively on Mechanical Engineering problems with engineering community and with society at large in both verbal and written forms.

P11 Apply the principles of project management and finance to Mechanical Engineering projects.

P12 Understand self education and the value of life-long learning.

Program Specific Objectives (PSOs)

The Engineering graduate will be able to

1) Apply engineering knowledge, practical skills in various streams of Mechanical Engineering such as Thermal, Design and Manufacturing.
2) Utilize various modern tools such as ANSYS, MATLAB, and CATIA in different domains of industry.
3) Get Employable in better engineering industries and pursue higher studies and research.

Holy-wood Academy, Kolhapur's
SANJEEVAN ENGINEERING AND TECHNOLOGY INSTITUTE
Sanjeevan Knowledge City, Somwar Peth- Injole, Panhala, Tal. Panhala, Dist. Kolhapur
Pin- 416 201. (Maharashtra) Phone : 0231 - 2686600, 21 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

Department of Mechanical Engineering

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Final Year B.E. Mechanical (Semester VII) (SUK)

Name of Program	Mechanical Engineering	**Name of Course**	Finite Element Analysis
Year	Final Year B.E.	**Semester**	VII
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Understand the fundamental concepts and theory of FEA		
CO2	Explain one dimensional problems using FEA theory		
CO3	Solve 2D plane stress and plane strain problems using FE approximations		
CO4	Analyze the truss for given loading condition		
CO5	Determine nodal temperature in thermal domain		
CO6	Explain types of finite element problems and steps in FEA		
	Finite element analysis Laboratory		
CO1	Develop the computer program based on finite element problems.		
CO2	Use commercial software to solve basic engineering problems in structure and thermal		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Final Year B.E. Mechanical (Semester VII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Mechanical System Design
Year	Final Year B.E.	**Semester**	VII

Course Outcomes

Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Understand the aesthetic & ergonomic principals in design.
CO2	Analyze the pressure vessel as per IS2825 codes.
CO3	Study the construction, working and design of different type of brakes and clutches.
CO4	Analyze machine tool gear box design.
CO5	Design the different I.C engine components like Piston, Piston pins and Connecting rod.
CO6	Compare the different parameters by using various methods for optimum design of mechanical component

Name of Program	**Mechanical Engineering**	**Name of Course**	Mechanical System Design
Year	Final Year B.E.	**Semester**	VII

Course Outcomes

Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Apply the aesthetic & ergonomic principals in product design.
CO2	Use IS Codes, Design data books for Designing and Analyzing the pressure vessel.
CO3	Design and Analyze the Gear Box.
CO4	Design various I. C. Engine Components.
CO5	Optimize design of various components or systems in mechanical engineering

Name of Program:Mechanical Engineering **Program Code: 631561210**

Class:Final Year (BE)Mechanical (Semester VII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	**TOTAL QUALITY MANAGEMENT**
Year	Final Year	**Semester**	VII
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Understand importance of assuring quality in the service or manufacturing sector and explain Quality assurance system		
CO2	Identify and solve the quality related problems in manufacturing or service sector at various stages by using various TQM tools and techniques,		
CO3	Calculate reliability of system		
CO4	Understand vendor rating and select suitable vendor		
CO5	Interpret various quality attributes and discuss the various quality approaches.		
CO6	Comment on quality using Taguchi Philosophy.		

Name of Program	**Mechanical Engineering**	**Name of Course**	**TOTAL QUALITY MANAGEMENT Lab**
Year	Final Year	**Semester**	VII
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Know the concept of total quality and role of quality assurance.		
CO2	Understand planning and controlling techniques for quality		
CO3	Know the reliability approach for quality		
CO4	Realize benefits of taguchi's quality philosophy		
CO5	Understand the key issues and some popular approaches to TQM implementation		
CO6	Understand the current trends in TQM		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Final Year B.E. Mechanical (Semester VII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Automobile Engineering
Year	Final Year B.E.	**Semester**	VII

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Identify** the different parts of the automobile.
CO2	**Explain** components of automobile like engine, transmission, clutch, brakes etc.,
CO3	**Distinguish** various types of automobile lay outs as per drive given to wheels.
CO4	**Solve** the problems related with various resistances for the automobile, engine power calculation.

Name of Program	**Mechanical Engineering**	**Name of Course**	Automobile Engineering Lab
Year	Final Year B.E.	**Semester**	VII

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Identify** types of automobile bodies and materials used for the same.
CO2	**Demonstrate** various automobile systems like clutch, gearbox final drive, brake, steering suspension wheels and Tyres, and its construction and working.
CO3	**Demonstrate** various electrical and electronic systems like lighting, starting charging electronic controlled management system and its construction and working principle, sensors used in automobile
CO4	**Explain** modern trends, techniques used in industries.

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Final Year B.E. Mechanical (Semester VII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Refrigeration & Air Conditioning
Year	Final Year B.E.	**Semester**	VII

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Demonstrate and understand the need and importance of HVAC technology, the typical and some advanced and innovative schematic designs, and the goals of HVAC engg. & HVAC systems.
CO2	Demonstrate and understand the thermal comfort conditions w.r.to temp., humidity, human clothing & activities and its impact on human comfort, productivity & health.
CO3	Demonstrate and understand the psychrometry and its application in HVAC engg. and design and will practice or observe psychrometric measurements.
CO4	Demonstrate and understand the heat transfer in buildings with a given architectural design and its application to heating and cooling load estimation especially including thermal lag effects by conducting a detailed annual load analysis for a representative building and presents the results of this analysis in a formal report possibly including recommendations for energy conservation.
CO5	Demonstrate and the understand the engg. & operation of vapor compression and possibly heat driven refrigeration systems and evaporative cooling systems and understand contemporary issues of ODP&GWP w.r.to refrigeration systems.

Name of Program	**Mechanical Engineering**	**Name of Course**	Refrigeration & Air Conditioning Lab
Year	Final Year B.E.	**Semester**	VII

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Identify** the meaning of Refrigeration & Air conditioning and Methods.
CO2	**Demonstrate** various systems of Refrigeration like vapour compression and vapour absorption, its principle, construction, working & performance.
CO3	**Demonstrate** various Air conditioning systems like Unitary & central A/C systems its principle, construction, working & performance
CO4	**Explain** different controls in Refrigeration & Air conditioning systems.
CO5	**Selecting** Refrigeration & Air conditioning equipment's based on its specification & features.

Name of Program:Mechanical Engineering **Program Code: 631561210**

Class:Final Year (BE)Mechanical (Semester VII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	INDUSTRIAL TRAINING
Year	Final Year	**Semester**	VII
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Comprehend the knowledge gained in the course work		
CO2	Create, select, learn and apply appropriate techniques, resources, and modern engineering tools		

Name of Program:Mechanical Engineering **Program Code: 631561210**

Class:Final Year (BE)Mechanical (Semester VII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Project Phase - I
Year	Final Year	**Semester**	VII
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Improve the professional competency and research aptitude in relevant area.		
CO2	Develop the work practice in students to apply theoretical and practical tools/techniques to solve real life problems related to industry and current research.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year, T.E. Mechanical (Semester V) (SUK)

Name of Program	Mechanical Engineering	**Name of Course**	Heat & Mass Transfer
Year	Third Year T.E.	**Semester**	V
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	State and describe mechanism and laws of heat transfer		
CO2	Determine the heat transfer rate in composite engineering systems		
CO3	Analyze the problem of heat transfer in extended surfaces		
CO4	Understand the mechanism and different laws of radiation heat transfer		
CO5	Evaluate the heat transfer coefficient in convective heat transfer		
CO6	Calculate the heat exchanger geometrical dimensions for given inlet conditions		
	Heat & Mass Transfer Laboratory		
CO1	Determine thermal conductivity of different materials		
CO2	Calculate thermal resistance for different systems		
CO3	Demonstrate the concept and principle of heat pipe, fins, heat exchangers and other heat transfer devices		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class : Third Year T.E. Mechanical (Sem V) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Manufacturing Engineering
Year	Third Year B.E.	**Semester**	V

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Know** the metal cutting technology, including the process, measurements, design & selection of various cutting tools & their industrial specifications.
CO2	**Describe** the design practices of tooling (jigs & fixtures) & die design for press work
CO3	**Explain** the process of design practices of single spindle automat
CO4	**Know** the various aspects of CNC machine technology & its tooling.

Name of Program	**Mechanical Engineering**	**Name of Course**	Manufacturing Engineering Lab
Year	Third Year B.E.	**Semester**	V

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Know** the working of Broaching machine, Grinding machine, Slotting machine
CO2	**Prepare** drawing of any one Drilling jig/ Milling fixture.
CO3	**Prepare** Tool layout, process sheet and cam design for single spindle automat.
CO4	**Know** tools used in CNC machining.
CO5	**Know** the design of jig and fixtures, sheet metal.

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year T.E. Mechanical (Sem. - V) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Control Engineering
Year	Third Year B.E.	**Semester**	V
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Know** the fundamentals of control systems and its classification and major applications.		
CO2	**Understand** the procedure of mathematical modeling of various control system components		
CO3	**Understand** the concept of system stability and application of various tools to check the system stability		
CO4	**Evaluate** the system response for various types of inputs		
CO5	**Analyze** the performance of control system.		

Name of Program	**Mechanical Engineering**	**Name of Course**	Control Engineering Lab
Year	Third Year B.E.	**Semester**	V
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Demonstrate** the working of system components like servo motors, amplifiers tachometers etc.		
CO2	**Demonstrate** the working P, PI, PD and PID controller in temperature and flow control systems.		
CO3	**Prepare** mathematical models of mechanical, electrical, fluid systems		
CO4	**Prepare** the root locus and bode diagram for given transfer function.		
CO5	**Evaluate** the control system performance analytically and using software		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year B.E. Mechanical (Semester V) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Machine Design I
Year	Third Year B.E.	**Semester**	V
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Study basis principles of machine design		
CO2	Understand the principals involved in evaluating the dimension of a component to satisfy functional and strength requirement.		
CO3	Understand and learn use of catalogues and design data book.		

Name of Program	**Mechanical Engineering**	**Name of Course**	Machine Design I Tutorial
Year	Third Year B.E.	**Semester**	V
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Study the fundamentals of design.		
CO2	Design the mechanical components at static conditions		
CO3	Using standard catalogues and design the belts and standard components		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year B.E. Mechanical (Semester V) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	THEORY OF MACHINES-II
Year	Third Year B.E.	**Semester**	V
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Indentify** the various types of gears.		
CO2	**Select** a gear drive for practical purpose.		
CO3	**Analyze** the gyroscopic effects for practical life.		
CO4	**Know** force analysis of mechanisms		
CO5	**Know** the basic principles of balancing		
CO6	**Know** the basics of Flywheel design		

Name of Program	**Mechanical Engineering**	**Name of Course**	THEORY OF MACHINES-II
Year	Third Year B.E.	**Semester**	V
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Generate** of involute gear teeth profile using rack cutter method.		
CO2	**Solve** numerical on epicyclic Gear Train and Flywheel		
CO3	**Perform** experiment on Gyroscope		
CO4	**Determine** M.I. using bifilar, trifilar suspension system and Compound pendulum method		
CO5	**Perform** experiment on Balancing of rotary masses		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year T.E. Mechanical (Sem-V) (SUK)

Name of Program	Mechanical Engineering	**Name of Course**	Mini Project-I
Year	Third Year	**Semester**	V

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Work effectively in a group on specific assignment, engineering or real life problems
CO2	Identify the real life, institutional, social, engineering, local industrial problems relevant to the societal and environmental issues
CO3	Think creatively to come out with feasible solution for engineering or real life problems
CO4	Design / Development of system, components or processes that meet the specified needs by using advance tools/ techniques/ resources
CO5	Communicate effectively on project activities, write effective reports, design documentation and make effective presentations

Department of Mechanical Engineering

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Second Year Mechanical (Semester III) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Fluid Mechanics
Year	**Second Year**	**Semester**	III
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Define and calculate various properties of fluid.		
CO2	Explain various types of flow and Calculate Velocity and acceleration of fluid particles.		
CO3	Apply Bernoulli's equation to simple problems in fluid mechanics.		
CO4	Explain laminar and turbulent flows on flat plates and through pipes		
CO5	Understand boundary layer .Explain and use dimensional analysis to simple problems in fluid mechanics		
CO6	Understand drag and lift. Apply fundamentals of compressible fluid flows to relevant systems		

Name of Program	**Mechanical Engineering**	**Name of Course**	Fluid Mechanics Lab
Year	Second Year	**Semester**	III
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Study of pressure measuring devices and Use manometers for pressure measurement.		
CO2	Observe different flow patterns over different shape objects.		
CO3	Understand laminar and Turbulent flow and determine Critical Reynolds number using Reynolds Apparatus.		
CO4	Verify Bernoulli's theorem.		
CO5	Do Calibration of flow measuring devices like Venturimeter, Orifice meter, V-notch.		
CO6	Determination of Major & Minor Losses in fluid flow.		
CO7	Study of wind Tunnel.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Second Year S.E. Mechanical (Sem III) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	APPLIED THERMODYNAMICS
Year	Second Year B.E.	**Semester**	III

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Understand basic concepts of physics and chemistry behind thermodynamics
CO2	Solve introductory problems on Rankine cycle.
CO3	Understand functioning of steam generators and condensers.
CO4	Design the steam nozzle.
CO5	Understand basic concepts of Impulse turbine.
CO6	Understand basic concepts of Reaction turbine, Governing and trouble shooting of turbine.

Name of Program	**Mechanical Engineering**	**Name of Course**	APPLIED THERMODYNAMICS Lab
Year	Second Year B.E.	**Semester**	III

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Understand different types of boilers, boiler mountings, Accessories.
CO2	Understand condenser and study of cooling towers.
CO3	Understand different lubrication properties.

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class : Second Year S.Y. Mechanical (Sem III) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Metallurgy
Year	Second Year B.E.	**Semester**	III

Course Outcomes

Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Analyze** the structure of materials at different levels
CO2	**Understand** concept of mechanical behavior of materials and calculations of same using appropriate equations and the strengthening mechanisms and suggest appropriate NDT technique
CO3	**Explain** the concept of phase and phase diagram and understand the basic terminologies associated with metallurgy
CO4	**Understand and suggest** the heat treatment process and types
CO5	**Prepare** samples of different materials for metallography
CO6	**Understand** the concept of powder metallurgy.

Name of Program	**Mechanical Engineering**	**Name of Course**	Metallurgy Lab
Year	Second Year B.E.	**Semester**	III

Course Outcomes

Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Measure** hardness of given material using Brinell and Rockwell tests
CO2	**Evaluate** stretchability of given sheet metal samples of different thicknesses
CO3	**Demonstrate** the application of various non-destructive tests
CO4	**Prepare** specimen for observing the microstructure of the material
CO5	**Sort** out plain carbon steel samples based on their carbon percentages

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class : Second Year S.Y. Mechanical (Sem III) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Machine Drawing
Year	Second Year B.E.	**Semester**	III

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Understand & draw various BIS conventions.
CO2	Specify and draw Limits, Fits & Tolerances in drawing.
CO3	Draw details from assembly and vice versa
CO4	Draw interpenetrated vies of solids.

Department of Mechanical Engineering

Name of Program:Mechanical Engineering Program Code: 631561210

Class:Final Year (BE)Mechanical (Semester VIII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Energy & Power Engineering
Year	Final Year	**Semester**	VIII

Course Outcomes

Sr.No.	**Upon successful completion of this course, the student will be able to:**
CO1	Acquire the knowledge of renewable sources of energy and utilization
CO2	Enable the student to estimate the potential of energy sources
CO3	Study various power stations , Performance and economic analysis
CO4	Understand the new trends in power and energy sectors

Name of Program: Mechanical Engineering Program Code: 631561210

Class: Final Year B.E. Mechanical (Semester VIII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Mechatronics
Year	Final Year B.E.	**Semester**	VIII

Course Outcomes

Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Understand** the introduction of mechatronics: Study the type of sensors and transducers and their applications.
CO2	**Understand** the need of signal conditioning, study the various parts used for signal conditioning, modes of data transfer and signal conditioning .

CO3	**Understand** the logic functions and their applications, study of comparison between microprocessor and microcontroller and their applications.
CO4	**Understand** the working of PLC and components used: Study the fundamentals of ladder programming and symbols used.
CO5	**Building** a ladder programs for problem related to industrial applications.
CO6	**Case studies** of mechatronics system designs, like piece counting system, pick and place manipulator and part loading and unloading etc.

Name of Program	**Mechanical Engineering**	**Name of Course**	Mechatronics Lab
Year	Final Year B.E.	**Semester**	VIII
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Trial** on sensors		
CO2	**Writing** and Executing the PLC programs based on industrial applications using Timers, Counters, Internal Relays.		
CO3	**Building** and fabricating the simple mechatronics working project.		
CO4	**Study** and writing assignments on Microprocessor and Microcontroller.		
CO5	**Study** and writing assignments on PLC data handling ,fault findings, SCADA and MEMS		
CO6	**Visit** to industry to study mechatronics system application and preparing a report.		

Name of Program:Mechanical Engineering **Program Code: 631561210**

Class:Final Year B.E. Mechanical (Semester VIII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	**Noise and Vibration**
Year	Final Year B.E.	**Semester**	VIII

Course Outcomes	
Sr.No.	**Upon successful completion of this course, the student will be able to:**
CO1	Develop Mechanical Model to represent dynamic system
CO2	Estimate natural frequency of mechanical element / system
CO3	Analyze vibratory response of mechanical element / system
CO4	Carryout measurement of various vibration parameters
CO5	Understand relevance of noise in Mechanical System

Name of Program	**Mechanical Engineering**	**Name of Course**	**Noise and Vibration LAB**
Year	Final Year B.E.	**Semester**	VIII

Course Outcomes	
Sr.No.	**Upon successful completion of this course, the student will be able to:**
CO1	Estimate natural frequency of mechanical spring, mass system at free vibrations
CO2	Estimate natural frequency of mechanical spring, mass system at forced vibrations
CO3	Measurement of vibrations using FFT Analyzer
CO4	Measurement of Noise using FFT Analyzer

Name of Program:Mechanical Engineering **Program Code: 631561210**

Class: Final Year B.E. Mechanical (Semester VII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Industrial Engineering
Year	Final Year B.E.	**Semester**	VII

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Analyze and design new method of performing job.
CO2	Measure and estimate standard time for job.
CO3	Understand different types of plant layouts.
CO4	Interpret job evaluation and merit rating.

Name of Program	**Mechanical Engineering**	**Name of Course**	Industrial Engineering Lab
Year	Final Year B.E.	**Semester**	VII

Course Outcomes	
Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	Understand the concept of productivity and solve the problems on productivity.
CO2	Solve Two case studies on method study with the help of Man; Machine chart and Two handed process chart
CO3	Demonstrate Stop watch time study for an operation
CO4	Explain Plant site location analysis and Plant layout problems.
CO5	Solve Case study on Value analysis and Case study on job evaluation and merit rating

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Final Year B.E. Mechanical (Semester VIII) (SUK)

Name of Program	Mechanical Engineering	**Name of Course**	Industrial Automation & Robotics(Elective: IV)
Year	Final Year B.E.	**Semester**	VIII
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Understand need and elements of automation with its advanced functions		
CO2	Describe industrial control systems and transfer line configurations, mechanisms, applications		
CO3	Explain automated assembly configurations and vibratory devices		
CO4	Understand fundamentals of industrial robots with its elements and properties		
CO5	Describe industrial robots end effectors and different sensors		
CO6	Explain industrial robot teaching methods and programming methods		

Name of Program:Mechanical Engineering **Program Code: 631561210**

Class:Final Year (BE)Mechanical (Semester VIII) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Project Phase - II
Year	Final Year	**Semester**	VIII
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Improve the professional competency and research aptitude in relevant area.		
CO2	Develop the work practice in students to apply theoretical and practical tools/techniques to solve real life problems related to industry and current research.		

Name of Program:Mechanical Engineering **Program Code: 631561210**

Class:Final Year B.E. Mechanical (SemesterVI) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Industrial Management and Operation Research
Year	Third Year	**Semester**	VI
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Explain** various functions of management.		
CO2	**Illustrate** the need to optimally utilize the resources in various types of industries.		
CO3	**Aware** about the norms of industrial safety, business ethics, MIS, Industrial Safety and procedure to start small scale industries.		
CO4	**Apply** the various models of operation research such as assignment model, transportation model, Linear programming model, Decision Theory Model, Network Model and Sequencing Model.		

Name of Program	**Mechanical Engineering**	**Name of Course**	Industrial Management and Operation Research Tutorial
Year	Third Year	**Semester**	VI
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Know** various functional areas of management.		
CO2	**Formulate** and solve engineering and managerial situations as LPP.		
CO3	**Formulate** and solve engineering and managerial situations as Transportation and Assignment problems.		
CO4	**Formulate** and solve engineering and managerial situations as Decision theory, Network model and Sequencing models.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class:Third Year T.E. Mechanical (SemesterVI) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Industrial Fluid Power
Year	Third Year	**Semester**	VI

Course Outcomes

Sr.No.	**Upon successful completion of this course, the student will be able to:**
CO1	Explain and draw different ISO/JIC symbols used in hydraulic and pneumatic circuits.
CO2	Demonstrate hydraulic and pneumatic system components.
CO3	Interpret the hydraulic and pneumatic circuits with their application.
CO4	Explain safety regulations and troubleshooting in hydraulic and pneumatic system.
CO5	Explain fluidics and their application.

Name of Program	**Mechanical Engineering**	**Name of Course**	Industrial Fluid Power Lab
Year	Third Year	**Semester**	VI

Course Outcomes

Sr.No.	**Upon successful completion of this course, the student will be able to:**
CO1	Classify and understand various hydraulic and pneumatic ISO/JIC symbols.
CO2	Discuss hydraulic and pneumatic system components.
CO3	Illustrate hydraulic and pneumatic circuits with its application.
CO4	Discuss maintenance and safety regulation in hydraulics and pneumatics.

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year T.E. **Mechanical (Semester VII) (SUK)**

Name of Program	**Mechanical Engineering**	**Name of Course**	Metrology and Quality Control
Year	Third year	**Semester**	VIII
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Identify and use various measuring instruments and select appropriate instrument for particular feature measurement.		
CO2	Distinguish and understand quality assurance and quality control.		
CO3	Prepare and understand drawings with general dimensions, tolerances and surface finish.		

Name of Program	**Mechanical Engineering**	**Name of Course**	Metrology and Quality Control
Year	Third year	**Semester**	VIII
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Identify and use various measuring instruments and select appropriate instrument for particular feature measurement.		
CO2	Use control charts and sampling plans to manufacturing and service sector problems.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year Mechanical **(Semester VI) (SUK)**

Name of Program	**Mechanical Engineering**	**Name of Course**	**Machine Design II**
Year	**Third Year**	**Semester**	**VI**
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Design machine elements subjected to fluctuating loading.		
CO2	Study the significance of interaction of manufacturing, assembly, and material election on product and process design.		
CO3	Understand effect of tribological considerations on design.		
CO4	Study and select rolling contact bearings and Select the bearing for the particular application from the manufacturer's catalogue.		
CO5	Design sliding contact bearings used in various mechanical systems.		
CO6	Design various types of gears such as spur, helical, bevel and worm gear.		

Name of Program	**Mechanical Engineering**	**Name of Course**	**Machine Design II**
Year	**Third Year**	**Semester**	**VI**
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Study of Ball bearing mountings and its selection preloading of bearings.		
CO2	Design and analyze the Spur / Helical gear box.		
CO3	Design and analyze the Bevel / Warm gear box.		
CO4	Understand the various components and there working in industry by visit.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year T.E. Mechanical (Semester VI) (SUK)

Name of Program	Mechanical Engineering	**Name of Course**	Internal Combustion Engines
Year	Third Year	**Semester**	VI
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Understand basic principle of operation of I.C. engines		
CO2	Differentiate between S.I , C.I. and Two stroke, Four stroke engines		
CO3	Demonstrate the different components of injection and ignition systems		
CO4	Explain alternative fuels used in I.C. engines		
CO5	Analyze the different performance parameters of I.C. Engines		
CO6	Calculate the air-fuel ratio for I.C. Engines		
Internal Combustion Engines Laboratory			
CO1	Understand the basic components of different fuel systems of I.C. Engines		
CO2	Calculate different efficiencies of I.C. Engines		
CO3	Evaluate the performance characteristics of I.C. Engines		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class : Third Year T.E. Mechanical (Sem VI) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	COMPUTER INTEGRATED MANUFACTURING Lab
Year	Third Year	**Semester**	VI
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Locate modern techniques for integrating CAD/CIM in CIM		
CO2	Obtain an overview of computer technology in Production Planning and Control including Computers, Data base and data collection, Networks, Machine Control.		
CO3	Apply classification and coding in Group Technology.		
CO4	Elaborate Computer Aided Production Planning and Control.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class : Third Year T.E. Mechanical (Sem V) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	**Workshop Practice -VI**
Year	Third Year	**Semester**	VI
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Know** the metal cutting technology, including the process, measurements, design & selection of various cutting tools & their industrial specifications.		
CO2	**Describe** the design practices of tooling (jigs & fixtures) & die design for press work		
CO3	**Explain** the process of design practices of single spindle automat		
CO4	**Know** the various aspects of CNC machine technology & its tooling.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Third Year T.E. Mechanical (Sem-VI) (SUK)

Name of Program	Mechanical Engineering	**Name of Course**	Mini Project-II
Year	Third Year	**Semester**	VI
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Work effectively in a group on specific assignment, engineering or real life problems		
CO2	Identify the real life, institutional, social, engineering, local industrial problems relevant to the societal and environmental issues		
CO3	Think creatively to come out with feasible solution for engineering or real life problems		
CO4	Design / Development of system, components or processes that meet the specified needs by using advance tools/ techniques/ resources		
CO5	Communicate effectively on project activities, write effective reports, design documentation and make effective presentations		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: S.E. Mechanical (SemesterIV) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Analysis of Mechanical Elements
Year	Second Year	**Semester**	IV
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Demonstrate fundamental knowledge about various types of loading and stresses induced.		
CO2	Draw SFD and BMD for different types of loads and support conditions		
CO3	Compute and analyze stresses induced in mechanical components.		
CO4	Analyze buckling and bending phenomenon in columns and beams.		

Name of Program	**Mechanical Engineering**	**Name of Course**	**Analysis of Mechanical Elements Lab**
Year	Second Year	**Semester**	IV
Course Outcomes			
Sr.No.	**Upon successful completion of this course, the student will be able to:**		
CO1	To gain knowledge of different types of stresses, Strains and deformation induced in Mechanical Components due to external loads.		
CO2	To study the distribution of various stresses in Mechanical Elements.		
CO3	. To study the effect of component dimensions and shape on stresses and deformations.		
CO4	Draw SFD and BMD for different types of loads and support conditions		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Second Year B.E. Mechanical (Semester IV) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Fluid & Turbomachinery
Year	Second Year	**Semester**	IV
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	Understand working principle of Impulse and Reaction turbine		
CO2	Understand the concept of Centrifugal pumps and various efficiencies related to it.		
CO3	Understand the concept of reciprocating air compressors.		
CO4	Understand the concept of centrifugal and Axial compressors.		
CO5	Understand working of Gas Turbines and know its various configurations.		

Name of Program	**Mechanical Engineering**	**Name of Course**	Fluid & Turbomachinery Lab
Year	Second Year	**Semester**	IV
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Identify** the meaning of Hydraulic Devices and their applications.		
CO2	**Demonstrate** various types of Turbines- its principle, construction, working & performance.		
CO3	**Demonstrate** various types of Compressors and Pumps- its principle, construction, working & performance		
CO4	**Explain** different Applications of Turbines, Pumps & Compressors.		
CO5	**Selecting** Turbines, Pumps & Compressors based on their specification & features for different applications.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class: Second Year B.E. Mechanical (Semester IV) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	THEORY OF MACHINES-I
Year	Second Year	**Semester**	IV
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Know** different types of mechanisms and their applications.		
CO2	**Analyze** kinematic theories of mechanism.		
CO3	**Know** different theories of friction and their applications.		
CO4	**Design** cam with follower for different applications.		
CO5	**Select** different power transmitting elements according to application.		
CO6	**Select** different governing mechanisms according to application.		

Name of Program	**Mechanical Engineering**	**Name of Course**	THEORY OF MACHINES-I
Year	Second Year	**Semester**	IV
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Know** basic terminology of kinematics of mechanisms.		
CO2	**Solve** Velocity and Acceleration problems by different methods graphically.		
CO3	**Solve** problems on cam profile graphically.		
CO4	**Perform** Experiment on Governor characteristics.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

Class : Second Year S.E. Mechanical (Sem IV)

Name of Program	**Mechanical Engineering**	**Name of Course**	Machine Tools & Processes
Year	Second Year S.E.	**Semester**	III
Course Outcomes			
Sr. No.	**Upon successful completion of this course, the student will be able to:**		
CO1	**Identify** Casting Processes, working principles and applications and list various defects in metal casting.		
CO2	**Understand** the various metal forming processes, working principles and applications.		
CO3	**Study** center lathe and its operation including plain, taper turning, work holding devices and cutting tool.		
CO4	**Study** shaping, planning and drilling, their types and related toolings.		
CO5	**Classify** the Non-traditional machining and understanding working principle and applications.		

Name of Program: Mechanical Engineering **Program Code: 631561210**

+

Class : Second Year S.E. Mechanical (Sem IV) (SUK)

Name of Program	**Mechanical Engineering**	**Name of Course**	Testing and Measurement Lab
Year	Second Year S.E.	**Semester**	IV

Course Outcomes

Sr. No.	**Upon successful completion of this course, the student will be able to:**
CO1	**Understanding** working principle and application of measuring instrument
CO2	**Calibration of** temperature measuring instruments
CO3	**Study of** pressure measuring instruments.
CO4	**Demonstration** of flow rate measuring instrument
CO5	**Classify** the basic vibration measuring instruments and understanding working principle and applications.

Holy-wood Academy, Kolhapur's
SANJEEVAN ENGINEERING AND TECHNOLOGY INSTITUTE
Sanjeevan Knowledge City, Somwar Peth- Injole, Panhala, Tal. Panhala, Dist. Kolhapur- 416 201
Phone : 0231 - 2686600 Fax : 0231 - 2686629 Mobile : 9049439898
■ *Approved By AICTE - New Delhi* ■ *Recognized by Govt. of Maharashtra & DTE* ■ *Affiliated to DBATU, Lonere (Raigad)*
Website : www.seti.edu.in Email : office@seti.edu.in / admission@seti.edu.in

EN 6315

Department of Basic Sciences and Humanities

FE PART- I	Course 1	**Engineering Mathematics-I**	
Name of Program	B.Tech-I	Program Code	
Name of Course	EM-I	Course Code	MATH101
Class	FY		
Course Outcomes		Students will be able to	
	1	to develop an ability to find rank, inverse of matrix	
	2	to find n-th derivatives of functions	
	3	to study the concept of partial diferentiation and Eulers theorem	
	4	to apply the concept of partial differentiation to find the percentage errror, series expansions	

FE PART- II	Course 1	**Engineering Mathematics-II**	
Name of Program	B.Tech-I	Program Code	
Name of Course	EM-II	Course Code	MATH201
Class	FY		
Course Outcomes		Students will be able to	
	1	To use properties of complex numbers in problems related to electric circuits, mechanical, telecommunication systems etc.	
	2	To develop an acquaintance with the methods of finding the solutions of differential equations of first order and first degree.	
	3	To develop an relationship with the methods of finding solutions of linear differential equations with constant coefficients.	
	4	fourier series expansion of different periodic functions so as to use them in harmonic analysis.	

	5	to evaluate double and triple integrals and study application of multiple integrals
	6	to check the ordinary, absolute and conditional convergence of the infinite series

	5	To develop knowledge of vector differentiation and vector integration.
	6	

Department of Basic Sciences and Humanities

FE PART- I	Course 1	**Engineering Physics**	
Name of Program	B.Tech-I	Program Code	
Name of Course	EP	Course Code	PH103
Class	FY		
Course Outcomes		Students will be able to	
	1	To Prepare students to exel in aptitude requiered in logical lateral thinking & understanding fundamental concept of phy.	
	2	Students absorbed the material taught , course description reffered mainly to the content of the course that would be covered in the lecture.	
	3	To demonstrate in terms of knowledge skills & attitudes inconcept of laser ,optics fiber optics	
	4	students express that ' exoti' topics mechanics quantun physics classical mechanics etc.	

FE PART- II	Course 1	**Engineering Physics**	
Name of Program	B.Tech-I	Program Code	
Name of Course	EP	Course Code	PH203
Class	FY		
Course Outcomes		Students will be able to	
	1	To Prepare students to exel in aptitude requiered in logical lateral thinking & understanding fundamental concept of phy.	
	2	Students absorbed the material taught , course description reffered mainly to the content of the course that would be covered in the lecture.	
	3	To demonstrate in terms of knowledge skills & attitudes inconcept of laser ,optics fiber optics	
	4	students express that ' exoti' topics mechanics, quantun physics classical mechanics etc.	

	5	More students centered insruction & a stronger emphasis on knowledge in nuclear physics.
	6	Students have knowledge about dual nature of wave particals,principles of compton effect

	5	More students centered insruction & a stronger emphasis on knowledge in nuclear physics.
	6	Students have knowledge about dual nature of wave particals,principles of compton effect

Department of Basic Sciences and Humanities

FE PART- I	Course 1	**Engineering Physics Laboratory**	
Name of Program	B.Tech-I	Program Code	
Name of Course	BCE	Course Code	PHY103L
Class	FE	Students will be able to	
Course Outcomes	1	Demonstrate an ability to make physical measurements and understand the limits of precision in measurements.	
	2	Demonstrate the ability to construct a variety of working electrical circuits.	
	3	Demonstrate the ability to measure properties of a variety of electrical and optical systems.	
	4	Demonstrate the ability to prepare a valid laboratory notebook.	

FE PART- II	Course 1	**Engineering Physics Laboratory**	
Name of Program	B.Tech-I	Program Code	
Name of Course	BCE	Course Code	PHY103L
Class	FE	Students will be able to	
Course Outcomes	1	Demonstrate an ability to make physical measurements and understand the limits of precision in measurements.	
	2	Demonstrate the ability to construct a variety of working electrical circuits.	
	3	Demonstrate the ability to measure properties of a variety of electrical and optical systems.	
	4	prepare a valid laboratory notebook.	

	5	Demonstrate the ability to use experimental statistics to determine the precision of a series of measurements.

	5	Demonstrate the ability to use experimental statistics to determine the precision of a series of measurements.

Department of Basic Sciences and Humanities

FE PART- I	Course 1	**Engineering Chemistry**	
Name of Program	B.Tech-I	Program Code	
Name of Course	EC	Course Code	CHM103
Class	FE	Students will be able to	
Course Outcomes	1	To check water quality parameters and advanced water purification techniques.	
	2	To explain basic chemistry behind corrosion of metals and various corrosion prevention methods.	
	3	To explain qualities of good fuel such as calorific value and its determination.	
	4	To explain basics of instrumental methods of chemical analysis and their applications.	
	5	To get the synthesis and applications of advanced materials and metallic materials	

FE PART- II	Course 1	**Engineering Chemistry**	
Name of Program	B.Tech-I	Program Code	
Name of Course	EC	Course Code	CHM203
Class	FE	Students will be able to	
Course Outcomes	1	To check water quality parameters and advanced water purification techniques.	
	2	To explain basic chemistry behind corrosion of metals and various corrosion prevention methods.	
	3	To explain qualities of good fuel such as calorific value and its determination.	
	4	To explain basics of instrumental methods of chemical analysis and their applications.	
	5	To get the synthesis and applications of advanced materials and metallic materials	

Department of Basic Sciences and Humanities

FE PART- I	Course 1	**Engineering Chemistry Laboratory**	
Name of Program	B.Tech-I	Program Code	
Name of Course	BCE	Course Code	CHM103L
Class	FE	Students will be able to	
Course Outcomes	1	To calculate water quality parameters.	
	2	To explain basics of instrumental methods	
	3	To calculate rate of corrosion	
	4	To prepare basic resin materials.	
	5	To calculate percentage of elements present in an alloy	

FE PART- II	Course 1	**Engineering Chemistry Laboratory**	
Name of Program	B.Tech-I	Program Code	
Name of Course	BCE	Course Code	CMH203L
Class	FE	Students will be able to	
Course Outcomes	1	To calculate water quality parameters.	
	2	To explain basics of instrumental methods	
	3	To calculate rate of corrosion	
	4	To prepare basic resin materials.	
	5	To calculate percentage of elements present in an alloy	

Department of Basic Sciences and Humanities

FE PART- I	Course 1	**Communication Skills**	
Name of Program	B.Tech-I	Program Code	
Name of Course	CS	Course Code	HS102
Class	FE	Students will be able to attain	
Course Outcomes	1	Students are found to be confident while using English (4th Level Bloom's Cognitive)	
	2	Engage in analysis of speeches or discourses and several articles (4th Level Bloom's Cognitive)	
	3	Identify and control anxiety while delivering speech (4th Level Bloom's Cognitive)	
	4	Write appropriate communications (Academic/Business) (4th Level Bloom's Cognitive)	
	5	Prepared to take the examinations like GRE/TOFEL/IELTS and to develop the ability to plan and deliver the well-argued presentations & Identify and control the tone while speaking (4th Level Bloom's Cognitive)	

FE PART- II	Course 1	**Communication Skills**	
Name of Program	B.Tech-I	Program Code	
Name of Course	CS	Course Code	HS202
Class	FE	Students will be able to attain	
Course Outcomes	1	Students are found to be confident while using English (4th Level Bloom's Cognitive)	
	2	Engage in analysis of speeches or discourses and several articles (4th Level Bloom's Cognitive)	
	3	Identify and control anxiety while delivering speech (4th Level Bloom's Cognitive)	
	4	Write appropriate communications (Academic/Business) (4th Level Bloom's Cognitive)	
	5	Prepared to take the examinations like GRE/TOFEL/IELTS and to develop the ability to plan and deliver the well-argued presentations & Identify and control the tone while speaking (4th Level Bloom's Cognitive)	

Department of Basic Sciences and Humanities

FE PART- I	Course 1	**Communication Skills Laboratory**	
Name of Program	B.Tech-I	Program Code	
Name of Course	CS	Course Code	HS102L
Class	FE	Students will be able to attain	
Course Outcomes	1	Better understanding of nuances of English (its sounds and rhythm)language through audio-visual experience and group	
	2	Neutralization of accent for intelligibility	
	3	Speaking skills with clarity and confidence which in turn enhances their employability skills	
	4	Use an understanding of communication principles to effectively speak, listen, and interact, both verbally and non-	
	5	To maintain good linguistic competence- through accuracy in grammar, pronunciation and vocabulary	

FE PART- II	Course 1	**Communication Skills Laboratory**	
Name of Program	B.Tech-I	Program Code	
Name of Course	CS	Course Code	HS202L
Class	FE	Students will be able to attain	
Course Outcomes	1	Better understanding of nuances of English (its sounds and rhythm)language through audio-visual experience and group	
	2	Neutralization of accent for intelligibility	
	3	Speaking skills with clarity and confidence which in turn enhances their employability skills	
	4	Use an understanding of communication principles to effectively speak, listen, and interact, both verbally and non-	
	5	To maintain good linguistic competence- through accuracy in grammar, pronunciation and vocabulary	

ENGG. & TECH. INSTITUTE PANHALA

PRINCIPAL
Sanjeevan Engg. & Tech. Institute
Somwar Peth, Panhala - 416 201